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MAGAZINE

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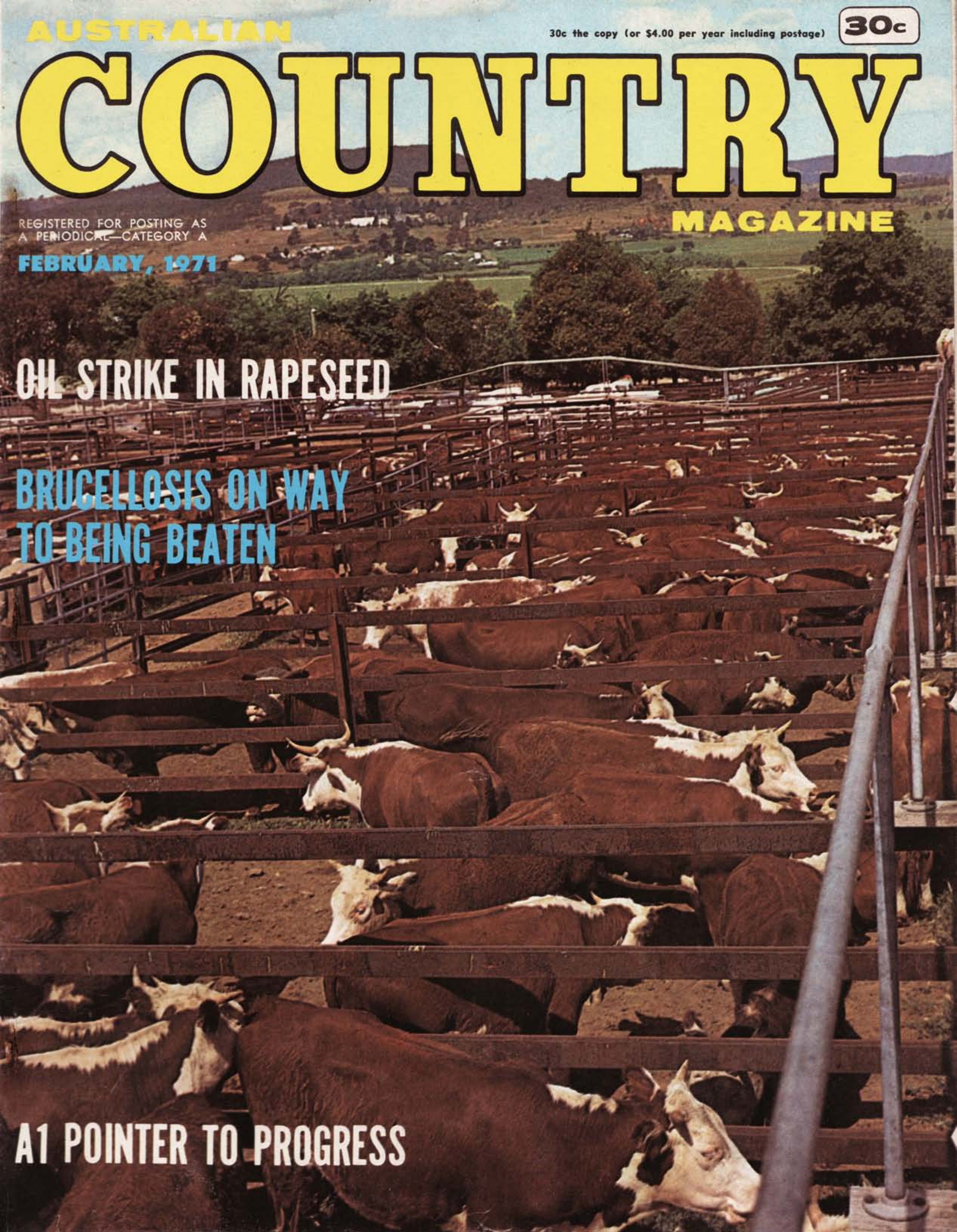

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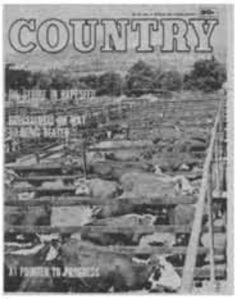

OUR COVER: Hereford cattle cram saleyards at a busy selling centre. This month COUNTRY reviews progress on eradicating brucellosis, one of the most serious threats to our beef markets.

AUSTRALIAN
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MAGAZINE

FEBRUARY, 1971. Vol. 30, No. 1

EDITOR: PETER CROSS
ASSISTANT EDITOR: BRIAN BAYLY

Brucellosis is gradually being entirely eradicated from this big country. But the job is not finished yet. On page 14 we look at just where we stand as of now.

There's still money to be made from sheep. But the secret lies in wool quality, not quantity. Our sheep feature includes a 10 point system for upgrading your clip.

Whilst most of our primary industries are suffering some form of hardship the honey industry is going from strength to strength, except for a small problem with the EEC.

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COUNTRY 'OPINION'

AI IS coming of age in Australia.

In most States new commercial centres have been established or are planned. For the first time it looks as though AI will be used on a large scale in beef breeding and the structure of a promising semen export trade is taking shape.

Apart from the traditional cattle two Australian breeds have created tremendous interest overseas and the demand will grow.

They are the Murray Grey and Australian Illawarra Shorthorn — beef and dairy animals respectively. In America the Murray Grey is being widely publicised and could rival the Charolais in the popularity boom as it becomes better known.

Perceptive Australian breeders, veterinarians and businessmen have provided for the export trade by establishing AI centres to cater for the market.

The trade will not be one way. The names of many breeds, unfamiliar to Australians, predominantly from Europe, are becoming commonplace to cattlemen in the US.

Limousin, Simmental, Maine Anjou, Lincoln Red are hardly known here. It will not be long before they are because these are the breeds likely to be seen in this country in the years to come — and all by AI.

The Limousin, a 19th century French beef breed, is long and relatively shallow with moderate to heavy muscling. Mature bulls average about 2400 lb. Their strong point is ease of calving.

The Simmental, from Switzerland, is a dual purpose milk and meat animal. In addition to size — bulls at 2400 lb — they have a capacity to calve early, good milking ability and the cows are noted for their longevity.

The Maine Anjou is perhaps the largest of most breeds — bulls weighing more than 2500 lb. Although regarded as a dual purpose breed the emphasis has been on beef.

The Lincoln Red from England is a growthy rugged animal with good calving ability and is used widely for crossing in the UK.

It is too early to say whether these new breeds will make the grade in the US but if they do the demand, and the bonanza likely to accompany it, will assuredly be cashed in on in Australia too.

Already semen has been ordered in Australia for some of them following the success of the Charolais.

But the pitfalls associated with AI, now being used at unprecedented levels, have to be watched.

Criticism was levelled at the standard of some of the stock from which semen has been imported to Australia — possibly not without some cause.

Research institutions here have been criticised by breed societies because of the use of semen from inferior stock.

The hazard is serious. Bloodlines from one bull can be propagated in such volume that weaknesses can be introduced in a season or two on a very large scale.

It beholds users of semen to ensure they are not so mesmerised by the prospect of a new breed that they allow any possible safeguard on quality to be overlooked.

It also beholds exporters of semen to maintain the standards and qualities the buyer expects.

All this ties up with performance testing which proves beyond doubt which animals grow and gain faster, produce meatier carcases than others.

Unlike other major beef producing countries Australia has no performance testing stations in different environments so that standards can be set and maintained for varied conditions throughout the country.

This is something we need without delay if we are not going to be left behind in the cattle business.

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Letters to the editor

Country invites readers to comment on any aspect of farming and grazing

FLOODING THE INLAND

Sir,

The proposal of the Metropolitan Waste Conversion Corporation to pipe sea water to the centre of Australia in the hope that it might increase the local rainfall on evaporation should be set against the experience of the years when Lake Eyre was full.

A similar scheme has been proposed off and on for Lake Eyre. For a year or two in the early fifties Lake Eyre was full. An engineer, who has taken a particular interest in the lake, made a study of the rainfall in the surrounding area before and during the period when the lake was full. No increase in the local rainfall resulted from the lake being full – if anything, it was below average.

Sheer proximity to a large area of water does not necessarily result in rainfall. Witness the low rainfall of the Nullabor Plain which extends right to the coast. There is some evidence of a slight increase towards the coast but not enough to be of any agricultural importance.

–H. J. Geddes, Director,
University Farms, Sydney.

MORE IDEAS ON FENCING

Sir,

The article, "This Fence is Tops" in the September issue, has come in for close scrutiny.

Poor old NSW began modern wire fencing just 19 years after Jas McHaffie drove 10,000 wooden posts and stapled five wires of one gauge (5/16" diameter) to them in 1842.

Gates have been rendered obsolete by fence lifts introduced by Andrew Read of Yerong Creek, NSW. Gateway posts, which move apart after shoddy erection methods, are not needed to hang panels between. Gates should be hung on faces of posts, chain knobs should be recessed to eliminate bruising device.

Post-hole digger on tractor! Plus crowbar for 40 posts per mile. This does not make sense, nor does the portion of a bridge pile for end post. However, with one more stay or two than is necessary if post is set 6 ft deep, expensively mortised under top wire, a big weight is needed to counter the rotating movement thus generated around feet of stay.

The preformed ties for fixing ringlock to star posts are incongruous. Has your writer seen the lifting and sinking of a fence with star posts every two chains in country subject to extremes of soil moisture? Or is someone oiling you up? And to introduce steel uprights in these days of ability to apply electricity in pulses of high voltage energy is just stupid. And just try holding a fabricated fence plus its "barb" mate (tied virtually immovably to its standards) down to ground a few times and watch it sag and bulge as its weak (850 lb BS) wires stretch.

Good wishes from a regular reader.

–Robert Piesse, Kew, Victoria.

FERTILISER MERGER

Sir.

The merger of three fertiliser companies represents another nail in the coffin of the primary producer – wage increases, higher shipping freights – where will it all end?

The announcement of the merger coincided with the news that the fertiliser bounty was to go.

Obviously the only way out for the farmer is to use less fertiliser – from the companies' point of view this means a drop in sales and from the country's point of view less and more inefficient production – the sort of thing the Government claims it is trying to avoid.

–J. M., Townsville, Qld.

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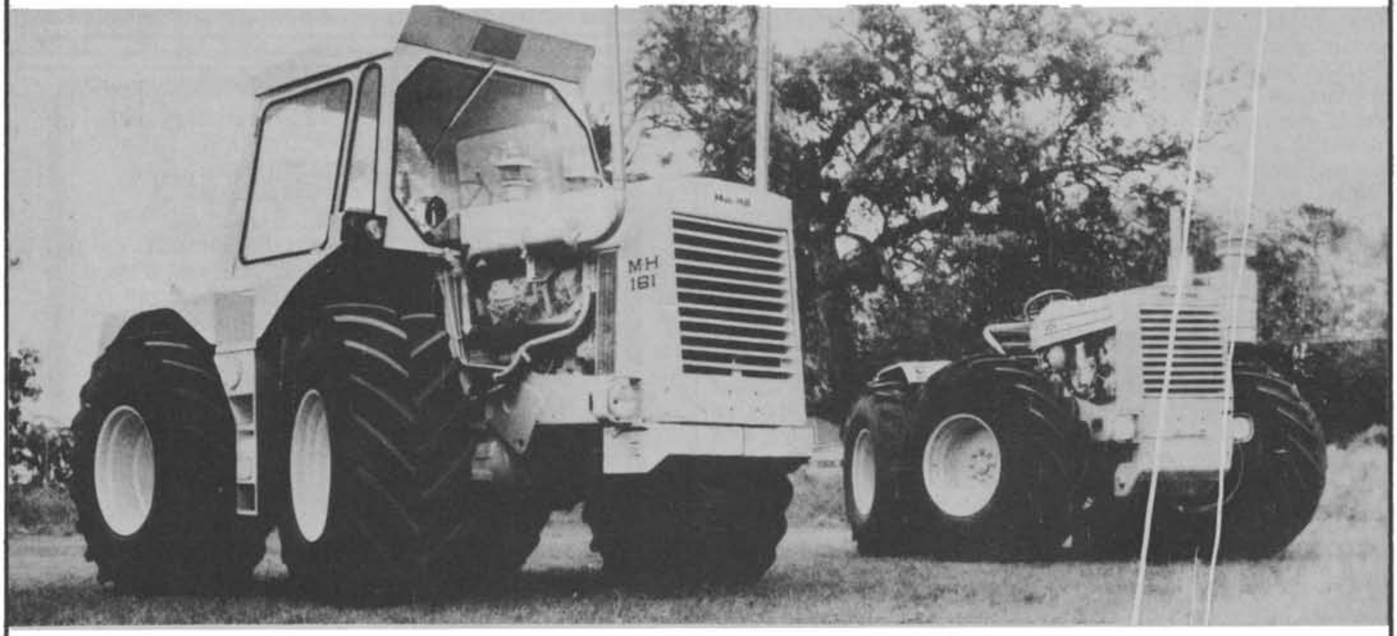

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PRODUCTS AND PEOPLE

FOOD QUALITY DEPENDS ON PESTICIDES

Without pesticides farm productivity and the quality of food would fall considerably, Dr H. G. S. van Raalte, head of the toxicology division of Shell International Research, said in Australia recently.

Dr van Raalte

He was quoting a report of a committee to the UK Minister for Agriculture — the Wilson Committee.

"The search for alternatives to pesticides for crop and food protection, while yielding valuable information and indications for new approaches, does not yet provide us with many economical and practical alternatives of general application."

The report said the need for increased food production in many parts of the world was still a matter of grave concern.

AUST GRAIN DRYERS FOR SUMATRA

An area being farmed in Sumatra, much of it jungle two years ago, is expected to produce a maize harvest of 10,000 tons this season. Ultimately three crops a year are envisaged.

An Australian firm, Grain Driers Pty Ltd, Villawood, NSW, will supply two complete grain handling installations to the company conducting the farms, P. T. Mitsugoro, of Djarkarta, Indonesia.

Ian Down, manager of Grain Driers said the company was a joint enterprise firm formed by Mitsui Ltd of Japan and P. T. Kosgoro of Indonesia, to engage in large scale farming and marketing of maize. Three farms have already been set up.

Ian Down said that because of unusual conditions in Sumatra and high humidities at harvest time maize would be picked at about 30 percent moisture and partially dried before shelling.

For this reason combine type harvesters could not be used and Grain Driers had been commissioned to investigate and supply equipment for harvesting.

Ian Down

US MAIZE FAILURE

Just returned from Japan and the US, general manager of the DeKalb Shand Seed Co, Peter Rothwell, has put forward some interesting theories, if Australian farmers would like to take him up on them.

Attributing the failure of the American maize crop to an extensive leaf blight epidemic, Mr Rothwell said this offered Australian growers and coarse grain exporters a tremendous opportunity to penetrate international markets.

"Corn leaf blight is playing havoc with the American maize harvest, which it is now estimated will be down by as much as 20 percent.

"It has also affected seed crops, tending towards a shortage of hybrid seed for the US plantings next year.

"As a result, there will be a significant reduction in the surplus of maize in the coming year, if not for two years," he said.

Mr Rothwell said that because of these US troubles which had created an urgent world need for maize, that Australia should seriously consider doubling its maize acreage.

This is with the view of meeting a need that could last for the next couple of years.

P. R. Rothwell

POULTRY ANTIBIOTIC

A new formula antibiotic for the control and prevention of respiratory diseases in poultry has just been released on the Australian market.

A highly soluble water medication, called Gallimycin P5 Concentrate, the formula is effective at regular levels with no additional calcium required in the rations.

Manufacturer is Abbott Laboratories, whose veterinary division marketing manager, Mr M. Donohoe, believes Gallimycin P5 to be the most effective treatment available for respiratory diseases in poultry.

Mr Donohoe said the product is packed in 76 gram cans, with ring pull tear off lid. One can is sufficient to medicate 40 gallons of water.

He said Gallimycyn P5 Concentrate combats the many different organisms involved in a CRD outbreak, which is not a simple one organism invasion but a complicated respiratory disease.

Michael Donohoe

THE CHAINSAW KID

Recently in Australia to conduct three day training courses in Sydney and Adelaide, Cal Currens left the American film industry, after appearing in six feature films, to teach selling skills on a professional basis; skills he had acquired between acting sessions, selling televisions, stereos and other items.

Two years ago however, at the age of 39, he decided to give it away and join McCulloch's as sales training co-ordinator, and was promoted to training manager shortly afterwards.

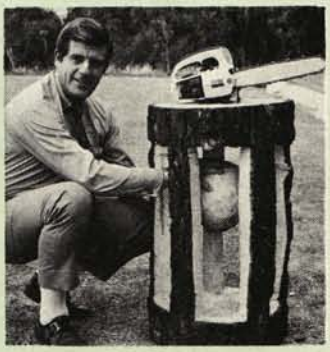
This involves the full time training of sales personnel within the company and on the distribution and dealer sides to help them become more effective with their customers.

"As for the Australian chainsaw market, the market is not only not slacking off," says Cal, "but it hasn't even been touched yet.

"What is needed is to show people the value of owning a chainsaw.

"The chainsaw is an extremely versatile tool.

"In America, where silage freezes in the winter, they just get out the chainsaw and cut it up.



Cal Currens

"And there's a big chainsaw market coming in Australia. It's going to get far bigger than people realise."

"Currently, McCulloch are improving their engineering techniques in Los Angeles in order to improve the efficiency, vibration and sound of their chainsaws.

"And this is very badly needed.

"In fact, in Japan you can't run a chainsaw for more than two hours without a rest. It's a law.

"Recently, we developed a line of chainsaws which reduce the vibration by 90 percent, so we're getting there."—END

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COUNTRY REPORTS

COW'S ANSWER TO MARGARINE

The production of new dairy products, including polyunsaturated butterfat, has been undertaken by the CSIRO.

Mr A. Royal, livestock research officer at Wollongbar Agricultural Research Station, NSW, is now working on a research project at the division of animal physiology at Prospect, near Sydney, dealing with the production of polyunsaturated butterfat from dairy cows.

The production technique involves feeding cows on vegetable oil protein concentrate. This looks and feels like powdered milk.

This material is especially treated with formaldehyde and when fed to the cow it passes through its system to produce a spreadable polyunsaturated butterfat.

MEATWORKS DECLARED UNFIT

Most of South Africa's abattoirs have been condemned as unhygienic and unfit for export by a British commission of inquiry. As a result meat exports from there to Britain have been curtailed severely.

Only a few abattoirs in the country were considered hygienic by the commission. The condemned works included the $3½ million abattoir at Maitland, Cape Town, opened in 1966.

Farmers had to either divert their cattle to other abattoirs which had satisfied the commission's requirements or stop selling meat for export and try to sell on the local market.

JUST ONE BIG PARK

A proposal that a vast area of central Australia should be set aside as a national park to stop the rapid deterioration of the land made by a correspondent in the Journal of the Australian Institute of Agricultural Science.

A. B. Cashmore, assistant to the dean, Faculty of Agriculture, University of Melbourne, suggests that within this national park grazing of sheep and cattle should be eliminated or controlled. He predicts such a reservation could become the basis for another State, better equipped to handle the special problems of the area than any present political division.

With a lead from the Institute of Agricultural Science, ecological principles would come to rank with economic considerations in regional planning and in the handling of problems of land use.

He says there is plenty of evidence that the sheep and cattle industries in the drier areas of Australia are, in general, in a bad way economically, and that the presence of livestock has caused, and is causing, a great deal of damage to the country.

"The establishment of the proposed national park would involve the removal of all livestock except in areas where local concentrations of people require some production of meat and milk."

SHEEP BETTER WITH COATS

A trial in Victoria has shown that a net profit of $5300 over three years or $1770 per annum might be obtained by placing synthetic rugs on a flock of 3000 weathers.

Philip Russel, of Mawallok, via Beaufort, who has been collaborating with the CSIRO Wool Research Laboratories in field trials, says "it definitely looks to be a goer."

Advances in rugging have been made through experiment over the past 14 years.

A big breakthrough occurred with the advent of fabrics woven from split film light-stabilised polyethylene. This development provided two big advantages that had been lacking in the early research work: cheapness and durability.

Rugs are now available commercially at 46 cents each.

After shearing rugged sheep had an advantage in weight and a higher greasy and clean fleece weight than those unrugged.

NOW IT'S HORSE AI

Horse AI is growing by leaps and bounds in the US.

One of the biggest breeding organisations there, American Breeders Service, expects to breed 2000 mares by AI throughout the US this season.

This is only a beginning but it shows the tremendous growth in a program that is only in its second year of operation and in its first year of being available to most parts of the country.

RICE AT A LOW EBB

The Australian rice industry now stood alone as an unsupported free trader of more than 80 percent of its production on international markets which gave little hope of improvement during the next few years, said the president of the Ricegrowers' Association of Australia, Ian Davidge.

The worldwide agricultural recession, overproduction and a steep decline in prices had brought the Australian rice industry to its lowest economic ebb in 30 years.

Production must not be permitted to exceed present acreages until the market situation improves, he said.

Self-imposed restrictions on production by the industry were an indication of the current concern felt by its leaders.

TROPHY FOR FINE WOOL

A grazier in the Western districts of Victoria has been awarded a trophy by an Italian wool firm for producing the best superfine lambswool in Victoria during the past season.

He is R. W. King of "Bowmont", Tatyoon, who became the second winner of the Carding-Tex Trophy which went the previous year to the Keith Brothers of Elmshurst.

The prizewinning lambswool was bought by the Australian woolbuying firm Nooth Hill and Sons Pty Ltd at 104 cents per lb.

BEES TO BOOST LUCERNE POTENTIAL

South Australia has introduced leaf cutting bees in an attempt to solve the problem of under capacity lucerne yields.

CSIRO plant breeder Dr Jim McWilliam said at the annual convention of the Seed Industry Association of Australia that Australia did not have enough pollinating insects for lucerne, which yielded only about a tenth of its potential.

He said the Australian grass farmer often had not the right machine nor particularly good seed. In the future Australia would see a great deal more pasture established from the air.

For satisfactory surface establishment other competing herbage had to be controlled and a suitable surface topography created. This might mean indenting the surface and the use of herbicides.

TROTTERS WANTED OVERSEAS

Mechanisation had almost replaced good old Dobbin on the farm but thank goodness it couldn't on the trotting tracks, said the NSW Minister for Agriculture, Mr Crawford.

He said sales of Australian-bred pacers and trotters to overseas countries had amounted to $2m during 1970.

Our standard bred stock were particularly popular with buyers from the US, and Canada.

"Our breeders deserve hearty congratulations for the part they are playing in popularising trotting as a sport and also must be commended for founding a budding export market."

BUFFALO INCOME RISES

Income from buffalo meat for both human consumption and pet food were running at about $500,000 to $600,000 a year, according to the annual Northern Territory Report.

"This production seems likely to double or threble over the next five years, depending on the rate of domestication and the availability of suitable land.

"Buffaloes have been slaughtered at the Katherine and Darwin abattoirs under full export conditions making available for the first time meat suitable for consignment anywhere in the world for market testing.

"Trial shipments were sent to the US, Singapore and the West Indies."

The report said there had been a marked movement toward domestication with about 2000 animals being branded following amendments to the Brands Ordinance.—END

your national notebook

By Peter Barnard

WHEAT GUARANTEE: The Wheat Index Committee (BAE chief, Dr S. F. Harris, Mr L. V. Price, president of the AWG Federation and the acting director-general of the NSW Department of Agriculture, Dr F. C. Butler) found production cost rises right along the line this season, setting the guarantee at 147.5 cents a bushel, a jump of 1.6 cents to be effective on 200,000,000 bushels of exports. Home consumption price rises to $1.74.

$$$ RECONSTRUCTION: Debt-restructuring has long loomed high on the Commonwealth Government's list of priorities for rural policy. Throughout 1970 the Bureau of Agricultural Economics devoted some of its best men to a national survey of the farm debt situation. By the start of December they had a 100-odd page report in the hands of their Minister, Mr Anthony, who was impatient to frame a Cabinet submission on it to set off the first of a number of fundamental moves to place sound agricultural enterprises on better terms with bank managers.

TOUGHER PESTS: Two major sets of agricultural insect pests are showing disturbing signs of resistance to chemical control — bugs capable of spoiling stored grain, and sheep blowflies. No new-style insecticides to counter either are in the pipeline, and all the scientific stops are out to find some . . . and to refine related counter-measures.

FREIGHT AID: The useful Federal subsidy on shipping charges on stock sold to Papua and NG has been raised to up to $120 a head. A good outlet for stud breeders, the Territory is halfway through a five-year plan to boost its cattle population from 56,000 to around 140,000.

TRADE BLOCS: The best-informed US sources say growth of protectionist sentiment in that country — expressed currently in the House Trade Bill placing mandatory quotas on textile and some other imports, and threatening to extend these to yet more — is a reaction to the EEC's tough lines on important commodity matters. Similarly, a body of opinion is growing in Australia that something approaching retaliation will have to be mounted against Europe, the chief offender against trade liberalisation. Both the US and Australia are suffering from EEC dumping of subsidised farm products all around the globe — the former, particularly, in South America, while Australia's sales efforts are being worst undercut in this regard in Asia.

OCCUPATIONAL HELP: Retraining of farmers wishing to leave the land under existing and impending government reconstruction schemes has been played down to date as a policy objective, but is now becoming an increasingly popular proposal with planners.

DAIRY UPTURN: Spectacular decreases have taken place in dairy surpluses in most parts of the world — more importantly in Europe, where butter stocks are 100,000 tons lower than their 1969 peak of nearly 400,000 tons. Production has tapered off generally and consumption has jumped, but the situation gives no cause for considering a national rationalisation of Australian dairying, to start in 1971, is any the less urgently needed. By the end of the year the industry's leaders and State and Federal Governments were reaching agreement on its form.

SUPER RESOURCES: Over $4,000,000 has already been outlaid on bringing North Queensland phosphate fields into production. Reserves there are conservatively placed at 2000 million tons, which would supply Australia's current requirements for hundreds of years and leave plenty over for fertiliser-starved Asia. A deepwater port to ship ore is to be built north of Burketown.

$1500 GRANTS: By the start of December plenty of money remained in the $30,000,000 kitty for emergency aid to wool growers. This column advised farmers months back to make applications even if they seemed to be excluded by the terms of the scheme, to be finalised well on into 1971, and this still goes. Borderline cases are being sympathetically considered . . . but should be particularly well-documented. Eighty percent of applicants are being helped, a third of them to the limit.

TERRITORY STYLE: Returning years ago from a review of the NT beef industry, a southern agricultural academic said, "It's not animal husbandry. It's hunting!" Times change, but not all that much. A recent report from the broadacre Territory records buffalo round-ups by helicopter at Mudginberry Station, on the verge of Arnhem Land, at a "field day" staged to demonstrate ways in which the buffs could be yarded and domesticated.

AIR AG: The Australian Aerial Agricultural Association has a sound case for Commonwealth policy changes in its favor which would also benefit farmers, and is worthy of the backing of land-owner bodies. The airmen suggest easing the steep fuel tax, licensing operators and cutting DCA route fees and sales tax on ground equipment.

FIBRE PRICES UP: Marked upward movements in some important synthetic fibre prices preceded the upturn in the wool market, and there are clear indications that the overall slide in textile raw material values is over at least for a year or two. The Australian Wool Commission came in at the right time to catch a rising market, and its operations have certainly helped hold gains firm as buying limits have risen.

QUOTES OF THE MONTH

Britain could enter the EEC by 1973. There could then be a transition period of three to five years. The time available to us is very limited.

— Mr McEwen, Deputy Prime Minister.

There are over 2,000,000,000 people in the States and 80 percent of them have never eaten prime lamb.

— Visiting US lamb industry representative.

Repayment periods are of crucial importance in land purchase; a farmer borrowing over 10 years at seven percent, for instance, would have to show a return of 14 percent, but a return of 10 percent would be adequate over 25-30 years.

— Mr Anthony, Minister for Primary Industry.

Collusive buying played a decisive part in forcing wool prices down to disastrous levels.

— Mr Grassby (ALP, Riverina).

Circumstances have led to an influx of new land-owners into farm industries; it would be a calamity if their activities were allowed to weaken the unity of purpose farmer organisations have built up.

— Mr L. R. Forrester, president, Australian Farmers' Federation.

By hearing evidence in public and making reports to Parliament, the proposed rural industries board could ensure that expert comment on the farming situation would be available to the country at large.

— Senator J. P. Sim (WA), chairman, Federal Rural Committee, Liberal Party.

The higher domestic price resulting from the US tariff on wool weakens this commodity's position in the fibre market there, and discriminates against imports of finer wools.

— BAE report.

Some trade unionists remain suspicious of efforts to raise productivity; they need to be convinced that this will allow real improvements in wages and conditions.

— Mr B. M. Snedden, Minister for Labor and National Service.

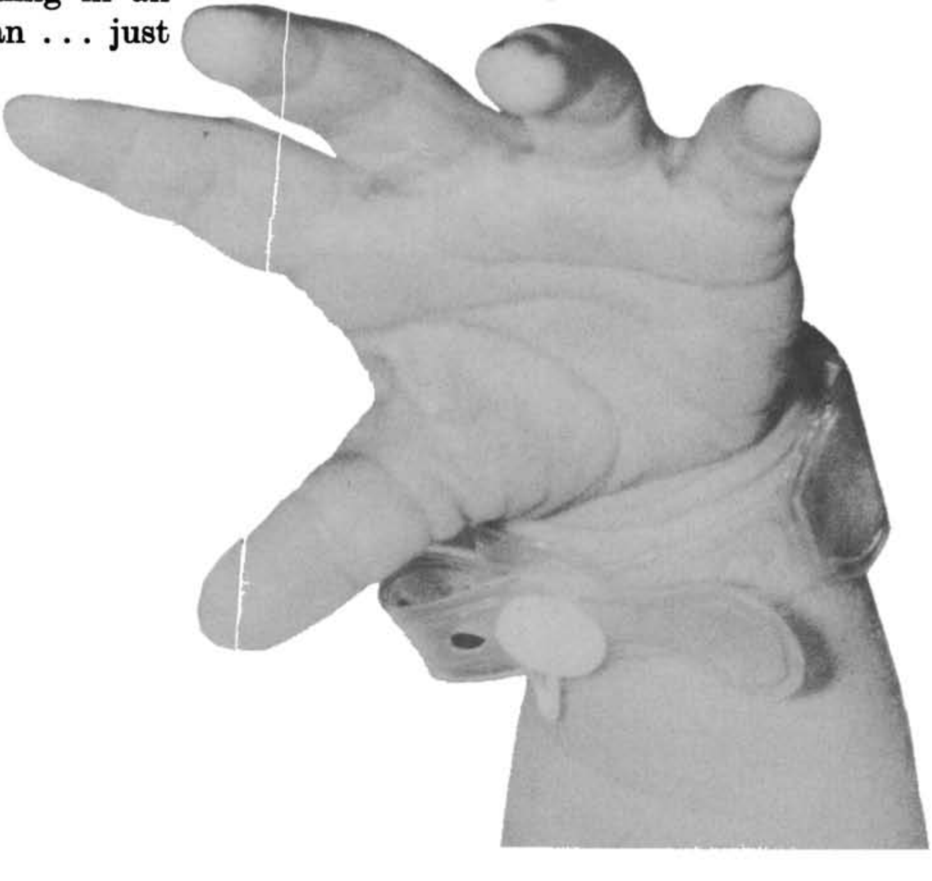
We face greater difficulty in attracting migrants than for many years.

— Mr Phillip Lynch, Minister for Immigration.

yesterday Peter John Anderson was born

This may well seem like just another insignificant birth to the majority . . . but to his parents it's the proudest moment of their life. Peter's father, John, is a farmer, his son will in time take over the family property. One day he will be calling in an Elders-GM man . . . just as his father does today. At the moment young Peter doesn't give a hoot what's going on around him, but in twenty years time he will, and so will we. Elders-GM have experts in every State of Australia, ready to serve you no matter what the problem. You can trust your Elders-GM man to provide the right answers.

Elders-GM



CAMPAIGN WELL UNDER WAY

BRUCELLOSIS THREATENS

Brucellosis is a threat to Australian meat markets abroad but a good start has been made on eradicating this disease.

THE NATIONAL campaign to eradicate brucellosis in Australia, for which controls were introduced in most States in the past year, has begun well.

The disease has been a costly one for this country in terms of calf losses, reduced milk production and human health. But in recent years the prospect of loss of markets has been an extra goad to speed control measures.

Stringent regulations introduced in European Economic Community countries have all but denied these markets to Australian beef – because of brucellosis.

Britain is likely to enter the EEC in the near future and obviously will have to conform to the Market's meat import requirements and standards so a further big gap in our meat trade outlets is in prospect.

And the United States, our most valuable beef customer at present, every year stiffens its imports from the outside world. It is expected ultimately to stipulate much stricter requirements for beef coming from countries with a brucellosis problem.

These further limits to the overseas acceptance of Australian beef were the prime motive for the Federal Government's implementation last year of the national campaign to eradicate brucellosis from our herds.

Brucellosis has been widespread in practically all cattle raising areas of Australia.

Formerly referred to as contagious abortion, the disease is highly infectious. The causal organism is Brucella abortus.

The principal feature of brucellosis is abortion in late pregnancy – from 4½ months onwards.

In dairy herds the most serious loss caused by the disease is a reduction in the quantity of milk produced by aborting cows – after an abortion during the last three months of pregnancy milk production can be reduced by

Cattle feeding on contaminated grass alongside a road is a way brucellosis can be introduced into a clean herd.

up to 35 percent. Even when they calve normally, the milking potential of affected cows may be lowered, especially if they harbor the causal organism in the udder.

In addition, abortions may interfere with the seasonal sequence of calving.

The monetary loss of calves must also be taken into account. Brucella abortus is infectious to humans in whom it can cause undulant fever. This resembles acute influenza but in some cases leads to chronic arthritis or, in exceptional circumstances, death. It can cause a chronic debilitating disease.

Infection results either from direct contact with affected cattle or from drinking milk from cows harboring the organism in their udders.

Cattle mostly become infected by eating grass contaminated with Brucella organisms. Infected cows may spread these organisms in their milk, urine, and, at the time of calving, in the afterbirth and discharges from the womb, which are the most important means of transmission.

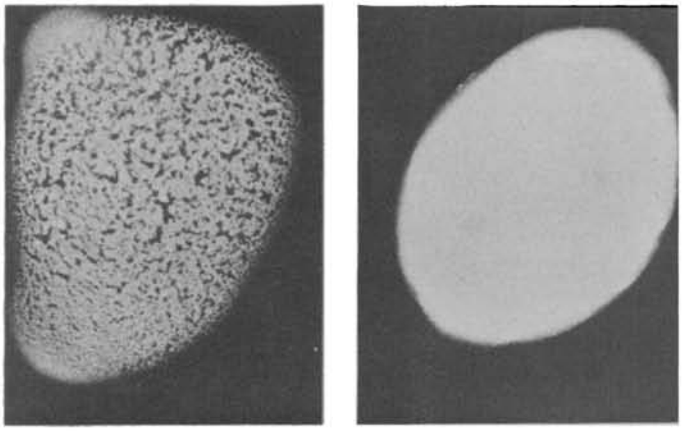
Bulls, too, can become infected, with Brucella abortus localising in the testes. Infected bulls might transmit infection to clean cows at the time of service, although this is uncommon.

The most importance source of introduction of the disease into clean herds is the purchase of infected cows. It may also be introduced by:

- Cattle straying on to infected land.
- Entry of infected cattle from neighboring properties.
- Cattle feeding in contaminated grass while moving along a road.
- Cattle sent to infected farms for agistment.
- Cattle sent to infected properties for service or received from such places for the same purpose.
- Mechanical transfer of the causal organisms from an infected to a clean farm on boots or vehicles.
- Drainage from an infected to a clean farm.

Udder infection may occasionally take place during milking through causal organisms being transferred from infected to non-infectedd cattle by milking machines.

Cattle in the early stages of the disease may fail to react to the tests available for the detection of affected animals. Occasionally infected cows that are pregnant or have calved or aborted during the previous two weeks may not react to blood tests, but become positive rapidly thereafter.



The Brucella abortus organism is on the right.

However, most react to tests performed on mucus obtained from the vagina.

The most sensitive tests are those on blood serum at a laboratory. There are also useful on-the-spot tests that can be performed on small samples of blood and which give an almost immediate result.

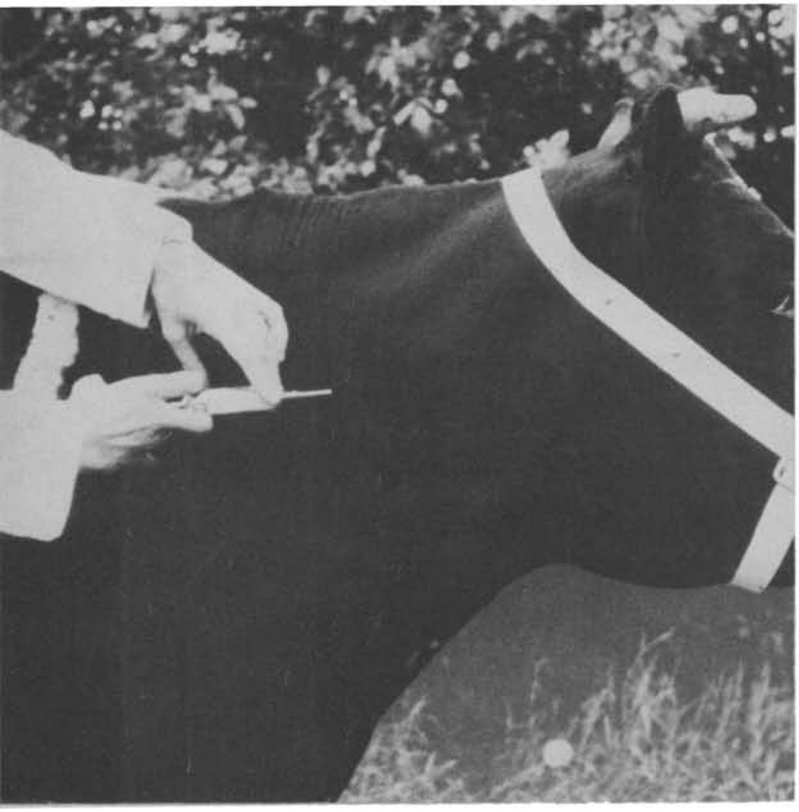
Further tests can be carried out on milk and cream. These can be performed on bulk samples at factories and depots and are very useful for identifying infected herds. Mucus can also be tested.

There are no drugs to eliminate infection from cattle harboring brucellosis. Such animals usually remain chronically infected and a potential danger to clean cattle for the remainder of their lives.

Brucellosis is controlled in two ways: preventive vaccination combined with sanitation, and eradication.

Strain 19 vaccine has become established as a major weapon in the attack on brucellosis.

Although not 100 percent effective in preventing brucellosis the vaccine does give cattle a high level of protection. Vaccinated cattle have a greater resistance against the principal effect of brucellosis – abortion.



A cow being vaccinated with Strain 45-20 which does not have a reaction in tests.

Even when cows have calved normally if they are affected their milking potential may be lowered.

But a big disadvantage of Strain 19 is that for a period following vaccination adult cattle react to routine brucellosis tests in the same manner as animals affected with the disease.

The younger the cattle are at the time of vaccination the shorter is the period during which this reaction persists.

Cattle inoculated as adults usually react to the test for several years.

In the past year or so, however, another vaccine effective in the control of brucellosis, Strain 45-20, has been introduced into Australia.

Strain 45-20 does not cause cattle to react to the diagnostic tests. It is useful, therefore, on mature animals.

But S45-20 vaccine does not adequately protect cattle until they have received two injections six to 12 weeks apart.

Thus onset of immunity is delayed in comparison with that given by S19. Booster doses are needed to maintain immunity. Strain 45-20 vaccines also might cause more severe local reactions.

An authority on this vaccine, Dr K. Van der Kooi, has been in Australia for the past three years establishing a production laboratory here for Philips Duphar Pty Ltd which has had a close association with campaigns in Britain, Ireland and the Netherlands where the vaccine has been used successfully.

"When you want to protect animals only against symptoms of the disease S19 is OK," he said.

"But when you want to eradicate the disease you need another vaccine," he said.

Both S19 and S45-20 figure largely in the Government-sponsored eradication campaign.

The actual work in each State and Territory is being carried out under detailed arrangements made by the local Chief Veterinary Officer.

Details vary from State to State depending on such factors as the incidence and dis-

tribution of the disease, organisation and strength of departmental veterinary services, the number and distribution of vets and arrangements for control programs.

Measures have been concentrated in the first instance in the following areas:

- The whole of the coastal plain of NSW, the whole of Victoria, and the whole of South Australia except the pastoral country north of the Quorn line.
- The coastal strip and hinterland of Queensland from the NSW border to Mosman or Daintree, plus the Darling Downs and the Atherton Tableland.
- The south-west of Western Australia from north of Geraldton to the coast south of Ravensthorpe and extending eastwards to include the shires of Ravensthorpe and Esperance.
- The Northern Territory and the Kimberleys.
- Tasmania which is already free from brucellosis except for King Island.

In the first instance, when required by the Chief Veterinary Officer, all heifer calves between the ages of three and six months in dairy herds and associated beef herds will be vaccinated with S19 vaccine without cost to the owner.

The same arrangements will apply to beef herds outside dairying districts at the discretion of the Chief Veterinary Officer.

Vaccination of cattle over six months is prohibited except when specifically authorised.

When considered preferable calves may be vaccinated with 45-20 vaccine.

When the level of brucellosis infection in an area has been reduced by vaccination to the point where final eradication by compulsory slaughter of reactors is justified, such cattle will be subject to compensation on the same basis as in the tuberculosis campaign.

States have embarked on extensive surveys of the incidence and distribution of brucellosis and an increasing proportion of these tests are being carried out on blood samples collected at meatworks from cattle sent for slaughter.

Uniform identification marks for calves vaccinated with S19 and S45-20 have been devised.

Dr D. F. Stewart, chairman of the National Brucellosis and tuberculosis Committee, said: The aim of the scheme is at least to conform to the very stringent requirements of the EEC.

"The Commonwealth Government agreed to match the mainland States' expenditure in the first triennium and allotted about $3.8m for this purpose plus costs for the Northern Territory in its accelerated campaign, plus special arrangements for Tasmania where the disease has all but been eradicated, plus the building of a special laboratory for testing facilities for S19 and S45-20 vaccines within the National Biological Standards Laboratory at Canberra.

"The whole Commonwealth expenditure is expected to be $4.06m in the first triennium.

"This Commonwealth expenditure will increase on a dollar for dollar basis to match the total increased mainland States' expenditure.

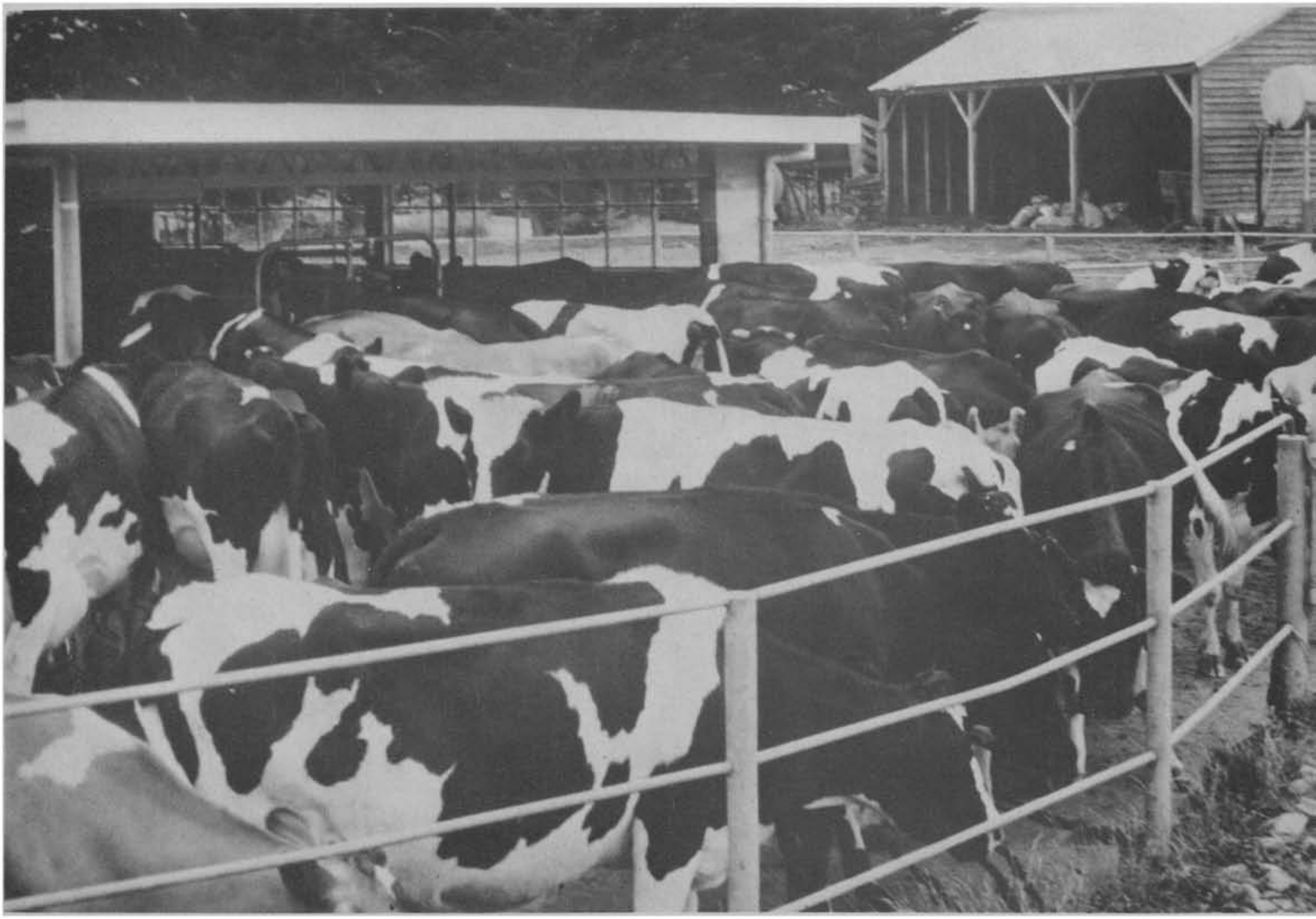
"The campaign is well under way in all States except Queensland where, because of the drought and finance problems, the base line expenditure was not reached in the first year.

"In solely beef raising areas progress in getting off the ground so far has been remarkable."

Dr Stewart said where S19 vaccine had been used indiscriminately in the past little progress could be made towards complete eradication until the cattle vaccinated as adults had died and until sufficient surveys had been made.

"Progress will be slower where S19 has been used in the past on adult cattle."

The dairy yard is a potent source of infection once the disease finds its way into the herd.



1 FLEECE WEIGHTS, LAMBING RATES LIFTED

Using a scientifically proven method of selection, Darval Hickson, a rural science graduate and working grazier, has lifted his Merino fleece weights from 8 lb-10 lb to 14 lb head and his lambing percentages from 70 to 90.

EIGHT years ago Darval Hickson returned to the family property at Eural, Garah, NSW, from the University of New England, with the latest techniques in animal breeding fresh in his mind.

He was determined to increase the wool and lamb production of the Merino sheep without a great outlay of capital.

"The critics," he recalls, "said no, it can't be done by your methods. They will all be inbred. You must buy an expensive ram; you must buy stud CFA ewes, and so on."

The method he used was to select the nucleus of a flock of ewes of high greasy fleece weight and above average wool quality, maintaining a count in the 60s to 64s region.

He took sheep which produced AAA or AAA combing, some being selected which had fleeces in the lower lines if weight was outstanding and count correct.

A higher weight requirement was placed on the AAA combing. This guarded against a complete reversion to all AAA combing as it usually has the highest fleece weights.

The only visual selection practiced was against excessive body wrinkles and muffled faces.

It was found that no regard need be taken of skeletal characters, such as hocks, thin chests and so on as characters which effect wool production are selected against it in the fleece weighing.

This picture clearly illustrates two points: The difference between qualities which has always been reflected in prices (58s on the left and 64s on the right) and the difference in types within these qualities; good spinning wols are in demand (furthest from camera), inferior top making wools less and less in demand (nearest to camera).

"Who are we to say what the high producing sheep should look like?" he says.

The nucleus or ram breeding flock has been maintained at about 10 percent of total ewe numbers. Each year about 10 percent of the best maiden ewes, selected on the above requirements, were put into the nucleus flock. After four years the older ewes were cast for age, and sufficient maiden ewes were brought in to take their places.

One third of the low fleece weight and bad wool quality maiden ewes are culled each year.

For the first three years, rams were brought from a local stud at a very reasonable price on production records compiled by the University of New South Wales.

These ranged in production from 0.8 to 2.0 lb clean scoured wool above the average clean scoured fleece weight, which ranged from 6.5 to 7.6 lb.

Rams were selected in the 60s to 64s range on crimps per inch, as there were no fibre diameter measurements available then. These rams from the local stud were replaced by Eural's own rams as they became available, being fully replaced in three years.

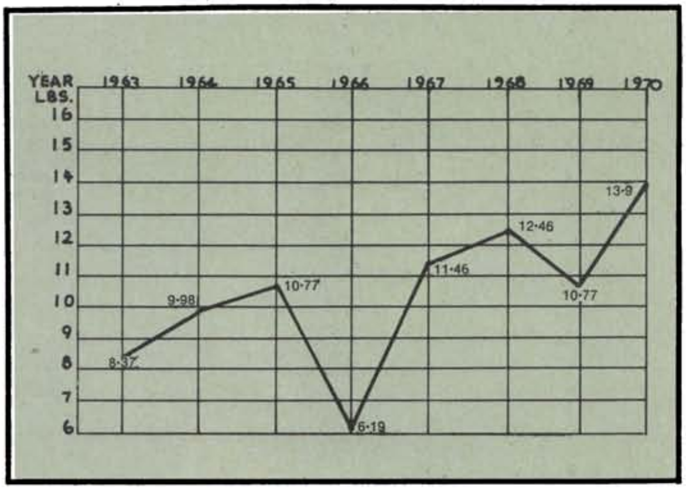
"Ram selection is now done using all the information available, clean fleece weight, classers bin, fibre diameter (must be finer than 23 microns), wrinkle score, face cover, type of birth (whether single or twin).

"We bias our selection towards twins, otherwise they are selected against, as their clean fleece weight is slightly behind singles at 18 months of age; however after a few years they seem to have the highest body weight.

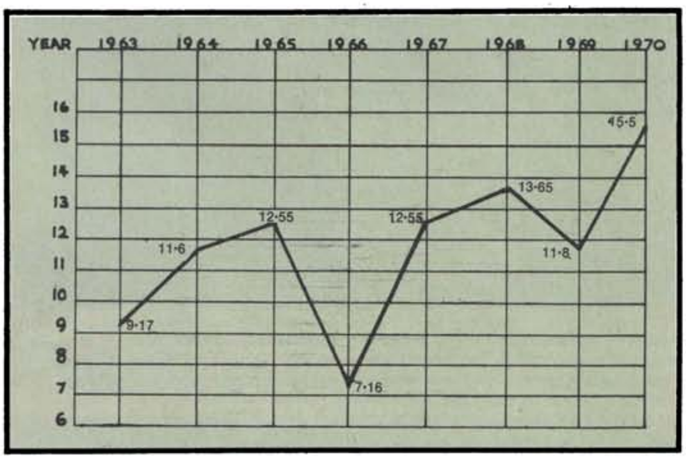
"From a ram flock of approximately 100 tooth rams, 17-18 tooth sires a year are selected, enough to replace half of the existing sires each year. This shortens the generation interval considerably enabling much faster genetic progress.

In future selection in an effort to increase lambing percentages further, more emphasis would be placed on the maiden ewe that rears twins.

GRAPH OF NUCLEUS FLOCK (STUDS) SELECTED FOR RAM BREEDING FLOCK



1966 year drought year
1969 year ran into dry period on road under section 69, badly neglected.
Increase in production of 2-tooth ewes including culls since 1963 5.53 lbs per head.
Stud or ram breeding flock since 1963 6.33 lbs per head.



A small percentage of the best of these ram lambs, along with perhaps the acquisition of a high fertility ram, would be used as sires for a high fertility flock. The past year, a bad one for lambing ewes, 30 maiden ewes, some being twins themselves, gave birth to twins.

Twelve of these ewes reared twins. "It is evident that there are some sheep which can have twins in a bad season and rear them," Darval Hickson said.

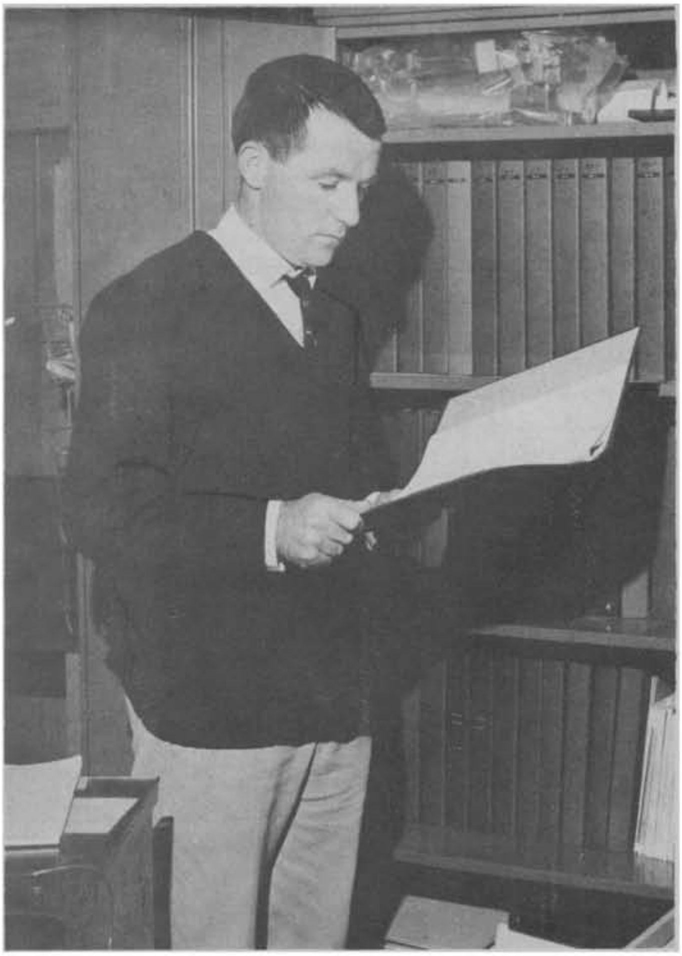
Since the introduction of this method of selection in 1963 fleece weights, which were always in the region of 8 to 10 lb greasy, have climbed to 14 lb per head greasy. Lambing percentages have moved from the 70 percent region to 90 percent. The overall stocking rate is basically the same as it was in 1963.

"I fully realise that not all this gain can be genetic gain.

"The real importance of genotype cannot be estimated, as there is no control. However there has been a considerable increase in wool cut per head, which was previously in the 8 to 10 lb range for a long time.

"It appears painfully obvious," said Darval Hickson, "that unless ram breeders and the ram buying public adopt a more modern approach to selection, fleece weights and lambing percentages, which have remained more or less stationary for the last 30 years, these will do so for another 30 years."

2 10-POINT SYSTEM TO UPGRADE CLIP



Keeping adequate but simple records is essential to Livestock Controls' system.

Communications play a big part in the way Lee Rieniets keeps in close contact with his clients.

This advisory company appears to have a logical, sensible program which means upgrading the whole of the nation's wool clip to a consistent level that scientists know we can produce.

QUALITY, not quantity alone, is the answer to wool income problems. This is the theory on which the firm of Livestock Controls has based its successful efforts to help Western Australian and now eastern States properties to produce wool of the right types to meet current mill demand.

Managing director Lee Rieniets said the company had propounded a 10-point system which his clients carry out under supervision. It marries the traditional skills of classing and culling to laboratory analysis for trace element deficiencies and micron measurement of wool fibre.

The aim is to make farmers produce to the best quality and type that their district will allow by ensuring that flocks are upgraded and reconstituted to take maximum advantage of environment and to realise the maximum potential of their own genetic makeup.

Many growers, he says, do not have a clear idea of the differences between quality and type in wool.

Quality means the number of hanks of yarn which can be spun from a pound of tops, each hank being 560 yards long.

In what is known as genuine Australian Merino sheep, qualities range from 56s to 90s and better.

Quality is a genetic feature and so cannot be altered overnight.

Type is a term relating to the differences of the product within a given quality.

So 64s quality wool that is termed extra super is a warp wool that is super stylish, free from any vegetation, of maximum strength and minimum waste when manufactured. It is known in any country of the world as type 6.

This same wool grown in different areas can vary in texture and can be classified into 19 other different types which are also recognised throughout the world.

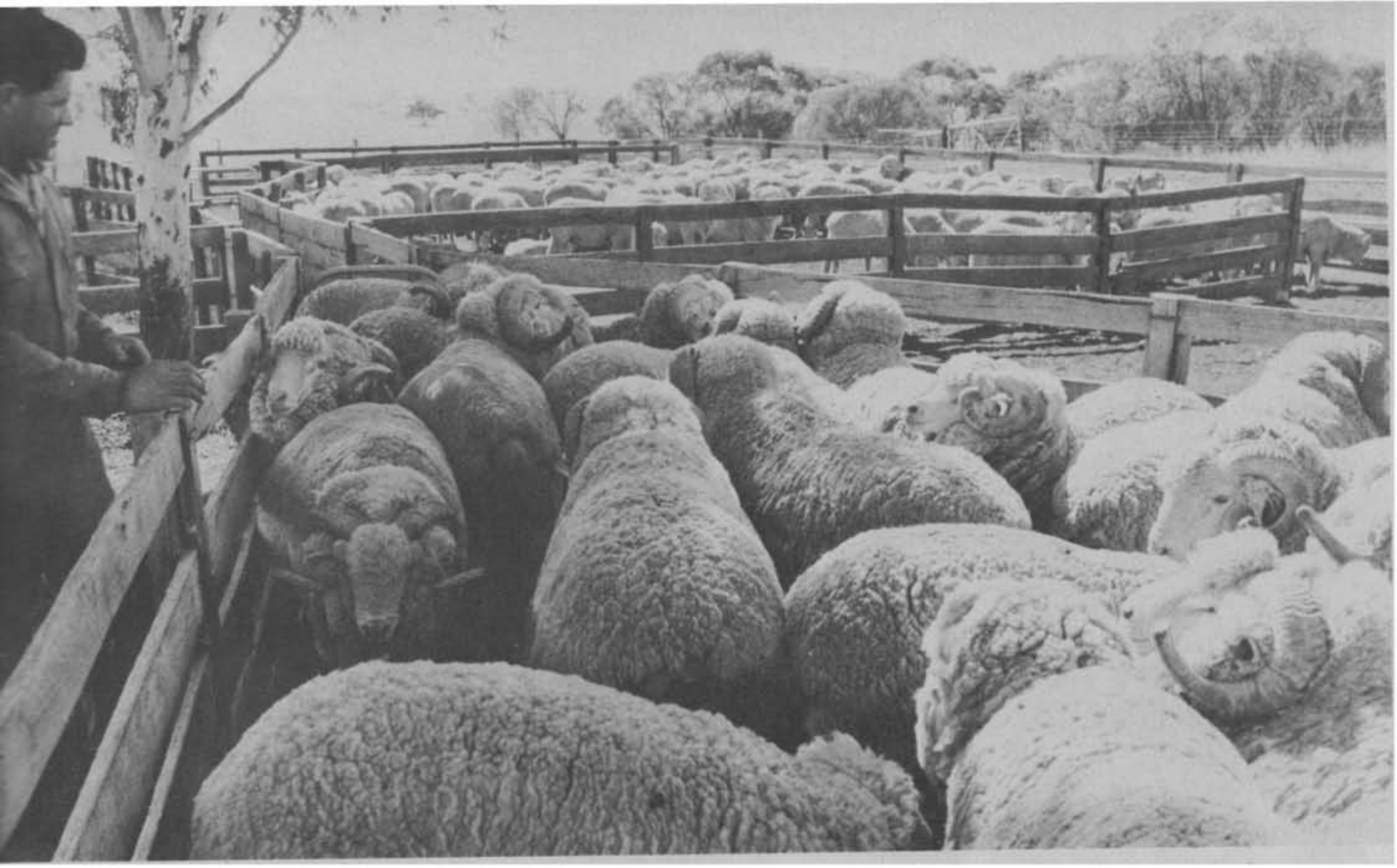
This is not a genetic factor but is in fact either an environmental and/or a managerial one.

What then are the factors governing these various types of wool and how can we use these to the best advantage to the grower?

Feeding must be balanced to allow the animal to reproduce wool. To achieve perfection within the quality being grown the requirements are:

- Genotype – stable genotype of the animals used to produce consistent quality.
- Environmental – healthy soil structure to ensure that pasture grown contains all the trace elements, minor and major, required to service the animals' requirements.
- Vegetation quality – top quality feed to satisfy protein and energy requirements.
- Vegetation quantity – adequate quantity of food to ensure maximum output per animal, as well as consistent fibre thickness.
- Cloud and atmospheric conditions – cloud hours in proportion to direct sunlight of the fibre, this means that the wool can be guarded against a certain percentage of the tip of the fibre becoming perished and wasted in manufacture.
- Rainfall – correct rainfall belt to ensure the growing season for green feed, or other easily digested, highly palatable food for the sheep for as much of the year as possible.
- Growing season – an area with a longer growing season will have a lesser dust problem and there will be less vegetation fault problems in the fleece. Both of these factors can seriously affect yield and so as wool is bought on a clean basis this means a serious effect on price per pound.

Mr Rieniets believes the Australian environment is such that our wool producers should aim at meeting the demand for 60s to 64s quality



Mr Waters checks the sales groups he has structured for best economic returns.

wool in most areas, with concentration of superfine wool only in those special areas capable of producing it.

"From the growers' point of view we agree that a fair marketing situation should give adequate levels of price for the whole Australian wool clip and true relativity between prices paid for various wools so as to give the grower incentive margins for producing it.

"We believe that relativity does exist and analysis of available statistics proves this.

"It remains for the Australian woolgrower to produce the product wanted."

- Visual classing eliminates sheep of the poorest wool types.

Livestock Control believes in the value of experienced woolmen culling sheep with hairy or off type wools by visual classing.

This saves the cost and time spent in fleece measurement of obviously poor sheep, reduces inefficiency in flock management by ensuring that only better sheep have to be cared for. An experienced visual classer will also determine whether or not flock rams are combining with the flock to produce the quality of wool desired.

- Determining fleece weight and body weight at shearing is a necessary step in assessing each sheep's earning capacity.

Body weight and fleece weight information is particularly important as these factors are inherited.

The company has designed cards and a tally list so that wool production, quality and type can be recorded by the farmers together with body weight.

These factors are then given monetary values and the income earning capacity of each animal is assessed.

The 10 points Mr Rieniets propounds to achieve best quality wool and meat production are:

- Biological analysis to determine trace element deficiencies.

Wool from sheep deficient in trace elements copper, zinc, cobalt and selenium lacks tensile strength and noils heavily in manufacture. If these faults are corrected the wool's value increases accordingly.

Livestock Controls begins its flock analysis with biological tests of liver and blood samples to determine what trace elements the sheep lack.

The most practical way to redress the imbalance of trace elements is determined and the sheep are treated.

In experiments sheep drenched for 4½ months with corrective doses of trace elements have cut up to half a pound more wool per head. Others have produced wool whose value increased by ¼c per lb.

In the field trace elements are spread on the ground, administered in drinking water or supplied in lick form.

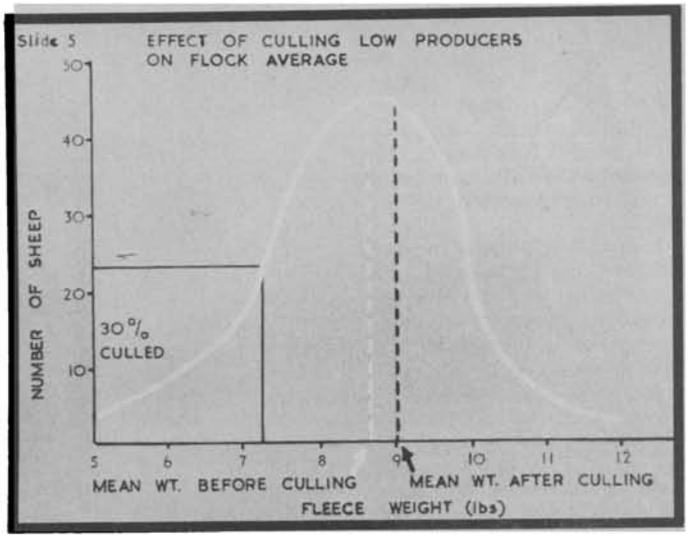
An indication of the biological status of the flock is obtained by testing liver and blood samples taken from a number of sheep, visual appraisal and analysis of the flock's past performance.

- Analyse measurements then group animals in flocks according to potential. Cull the worst.

Livestock Controls believes that culling on the basis of wool weight alone does not ensure economic increase. A flock can lose quality in favor of quantity and these days the market is more interested in quality than quantity.

However, as the difference between the best and the worst animals in a flock can be 100 percent both in body weight and fleece weight these factors must be assessed to-

Diagram shows how culling on fleece measurement results in increasing the mean weight of wool per sheep by between ¼ lb and ½ lb.



The cattle industry also benefits from the same methods. Here Dick Overheu of Esperance shows the benefit of production testing on his herd.

gether with quality of both the wool and the meat.

If a farmer has a flock whose income ability varies from $6 to $3 a head then it is commonsense to pinpoint the low producers and remove them from the flock.

The worst sheep, judged on economic performance, should be culled immediately; progressively the standard of the flocks should be raised.

- Wool samples from flock rams must be tested to determine the micron measurement of the fibres and the relationship between primary and secondary fibres.

Micron measurement is the most important factor determining wool values.

Almost as important is the ratio of primary to secondary fibres. Wool with more secondary fibres has better handling qualities, for example, for the fine silky feel in the wool an approximate ratio of six to one would be required.

Livestock Controls recommends testing for both micron measurement and the ratio of primary to secondary fibres in the wool of all rams to be put over a flock.

A grower can benefit greatly from testing rams before buying as the influence of his purchase on his future wool prices can be more accurately determined.

- Three main lines of each wool clip should be tested each year for micron measurement and primary/secondary fibre ratio so that progress can be assessed.

If a grower is to advance towards the goal of better wool and more of it on each sheep he must be able to gauge his progress.

The cheapest and most practical way to do this is to collect a small sample, say a quarter pound from each of his major wool lines. The company will test these microscopically.

The test also reveals tensile strength which is directly related to nutrition and tearing ability.

- As a result of collecting all this information the farmer must act by grading ewes and rams for mating and so ensure continued improvement in the flock. Culls must be removed.

- Selection and purchase of rams if they are needed.

If the rams being used are not able to give the grower the type of wool improvement he needs then rams have to be selected to redress any deficiencies.

- Assess the results of the program progressively each year by inspecting the wool.

When the wool is on the sale floor the farmer should discuss with the broker's wool valuer and his advisers the progress the wool has made, assess this and set direction for future development.

- The company keeps in touch with international markets for wool and meat to bring farmers' production aims as close as possible to market requirements.

R. WATERS
RAM GRADING 1967
GRAPH WOOL WEIGHT & BODY WEIGHT CHART

Mr Ron Waters has employed Livestock Controls in the development of his Carnamah stud "East End" since 1965.

The Cattle Handlers:

Look at the Cyclone line-up of steel cattle handling equipment.

Galvanised steel yards. Heavy duty five or six bar panels for permanent yards. Or, dual purpose panels of four or five bars with separate posts for either permanent or portable designs.

Heavy gates. Four, five, or six bars. Solid, rigid, right for any yard. Easy to hang from steel, timber, or concrete posts. Complete with all fittings.

Rugged loading ramps. All galvanised steel with timber decking, or optional sides for your own fill. Plus the new portable ramp on pneumatic tyres.

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The strongest prefabricated fencing for beef cattle. Three heavy 11- gauge High Tensile wires built-in at the top, middle and bottom. No added wires needed.
Just look for the three red wires.

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Free illustrated brochure: send to Cyclone K-M Products Pty. Limited in your capital city for your copy of 'The Cattle Handlers', detailing the toughest, most economical, easiest-to-use equipment available – plus a wide selection of yard layouts.

HISTORIC ARABS LIFT

Over the centuries Arabian horses have been used in countries throughout the world to improve the quality of local breeds. Now their influence is spreading in Australia.

by PAULINE PETERS

WITH the ever-increasing popularity of pony clubs and shows the need has been highlighted for a horse of quality, reliable temperament and suitable size.

Husband and wife John and Jackie Davis, on a small holding at Regentville in the Nepean Valley near Penrith, NSW, some years ago recognised the Arabian and Arabian cross to be such a horse.

The pure bred Arabian was priced beyond the range of the average pony clubber, stockman or showring aspirant but, selectively bred, registered part bred Arabians or Anglo Arabians, they felt, would provide suitable, reasonably priced mounts for the most discriminating equestrian or stockman.

They established Wongaburra Arab Stud and specialised in breeding part bred and Anglo Arabians capable of being real "doing" horses. Stock from there have since gone to all parts of Australia.

In recent years, they find, part bred Arabian colts are becoming very popular as station sires, particularly with station owners who like some Arab blood.

In 1968 the stud obtained the mature pure bred stallion Omar by Sala, imported by the NSW Department of Agriculture, one of the early Arabians imported to this country.

Although the stud now has several pure bred Arabian mares they are continuing to concentrate on breeding part bred and Anglo Arabians.

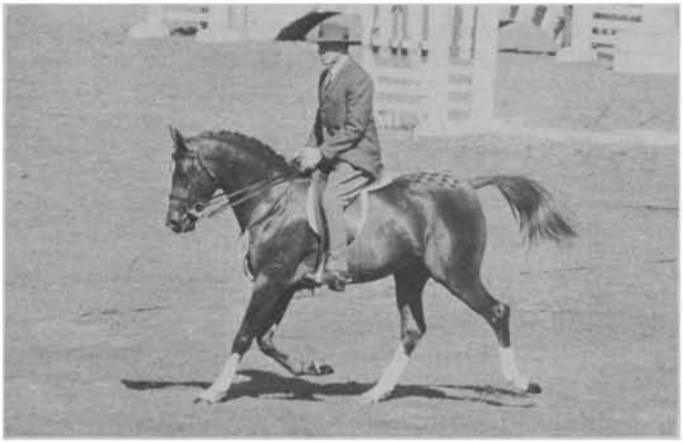
The pure Arabian horse is a product of centuries of use and development in the deserts of Arabia where the climate tended to develop a hardy, enduring breed.

The Bedouins selected for their breeding stock those animals that were most active and most responsive under saddle, that could withstand the long rough marches and at the end often take part in warfare; where speed, agility and hardiness constituted the difference between winning or losing or, indeed, between life and death.

Omar, senior sire at Wongaburra, has shown himself to be a capable stock horse.

OUR HORSE QUALITY

Ravlon Quickstep, a pure Arab gelding, takes the top award for his breed at a National show.



Santarabia Shekh, junior sire at Wongaburra, is a polished saddle horse as he parades at the show.

Another partbred Arab shows she is an accomplished stock horse as she heads off a breaking cow.

Wongaburra Sovereign demonstrates the versatility of the Arab in Pony Club Jumping.

So it was that only the very best survived.

When other European countries decided to improve their saddle horses they imported Arabians to infuse with the native strains.

England developed the thoroughbred in this manner and in the recorded pedigrees three Arabian stallions – Byerly Turk, Darley Arabian, and Godolphin Arabian – are conspicuous.

Arabs were used also in France, Spain, Germany, Holland, Hungary and other countries. In fact, the accepted standard procedure of the time was to use pure Arabian to improve native stock.

For more than 125 years every winner of the English Derby descended from an Arabian. Nearly 87 percent of the winners descended from one great stallion – Darley Arabian, imported into England in 1706.

Famous Eclipse was a descendant of the Darley Arabian as were Blaze, the founder of the Hackney breed, and Messenger, the great American foundation sire of the trotting horses.

Today however, we are more concerned with the riding horse. There has never been more interest in a high class "using" and "pleasure" saddle horse than at present. And this is the field in which the Arabian is supreme, for he is the only breed which has been kept pure for this particular purpose.

Disposition is far more important today than it has ever been because so many with little experience are riding. Easy action and beauty are also becoming of paramount importance.

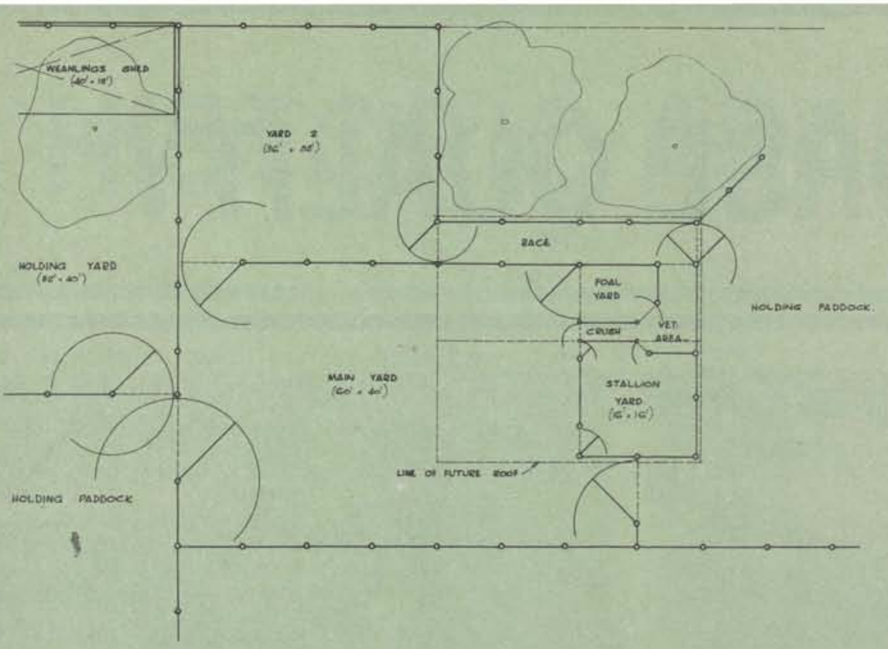
Arabians excel most breeds in their refined, highly finished distinctive type.

As a breed they are beautifully fronted, an exceptional head with large expressive eyes, nicely arched neck, good sloping shoulders and good withers not too prominent.

They have a short coupled back and a turn of rib and a depth of flank indicative of their great endurance.

For many years the misconception has existed that Arabians are typically weak quartered animals with cow hocks and that they are too hot blooded to be of real use.

It is true unfortunately that many inferior mares and stallions have been presented by their owners as being true to type. However over the last decade, conscientious breeders have done much to improve the breed and to adhere strictly to the standard [illegible] down and adopted over [illegible]turies.



The yards at Wongaburra for all breeding work.

The stallion is turned loose in the stallion yard (16 ft sq by 7 ft high) and mares brought into the small holding paddock where they have access to two sides of the stallion yard.

Mares showing more than usual interest in the stallion are brought into the main yard for closer observation. Shy or poor showers are left in the vet area. Concentrated teasing is done in the crush but is usually unnecessary.

Mares are prepared and served in the main yard. Mares with foals at foot are placed in such a position that they can observe their foals in the safety of the foal yard.

The crush is used for all veterinary testing, drenching and so on. Horses are brought into the crush via the race. The front gate of the crush is divided into two halves to allow easy access for drenching or dentistry. One side of the crush also has two hinged doors half way up to allow fractious horses to be given injections and so on.

This same side hinges out completely so that a horse can easily be released in the event of a fall.

The foal yard at the side of the crush simplifies and softens the handling of small foals and they will generally stand quiet beside their mothers.

The yards are also used for general handling of young stock. The weaning yard and bard is adjacent so that weanlings can be let into the yards for easier and safer handling.

On quarters, the standard states: "The thigh, quarters and gaskins are powerfully muscled and the stifle somewhat detached from the body, allowing for its free movement. The gaskin is relatively long and in proportion to the length of the forearm.

"The hock must be large, well let down, clearly moulded and having a well developed and defined point.

"The cannon, fetlock, pastern and hoof are similar to those of the fore limb (short flat cannon with a rare combination of strength without heaviness or coarseness, pastern of medium slope and length, hoof round, open at the heel and possessed of extremely dense horn and big well developed frog) except that the hoof, as in all horses, is narrower.

"From a rear view, the hind limbs should be squarely placed with the point of the hock and the centre line of the cannon, pastern and cleft of the heel being in line with a plumb line dropped from the point of the buttock."

On temperament the standard states: "The Arabian is the embodiment of all that is noble in horses. It is at once fearless, intelligent, gentle and docile with an indescribable fire and pride of carriage. The Arabian responds to kindness and shows profound confidence in its master. It likewise resents harsh, cruel treatment."

Few Arabians have been released from breeding duties for stock work. Although the Arabian comes from a country that is mostly hot desert, he adapts easily and has been used as a stock horse on properties in high altitude where winters are severe.

The Arabian's prime virtue – endurance – makes him ideally suited for station use. His ability to turn in a small arc and his compact size are both assets appreciated by the stockman.

His ability to transmit these hardy qualities makes him a desirable sire and improver of lesser breeds.

The Arabian makes an excellent trail horse. Give him little more than superficial training in what is expected of him and he will perform like the intelligent fellow he is.

Practically every Arabian owner can enjoy the pleasure of jumping his horse if he wishes.

Because of the shorter stature he cannot compare with a 16 or 17 hand competitor, but for his size he will do proportionately as well, as he puts an amazing amount of spring into his jumping.

Arabians make excellent dressage horses, both in competition and exhibition.

One of the most important parts played by the Arabian is as a producer of part bred Arabians and Anglo Arabians.

Because of the relative scarcity of pure Arabians, few of them get the opportunity to prove their versatility.

The basic goal of the breeding of part bred Arabians is to produce the refinement, strength and extreme intelligence of the Arabian, coupled with the outstanding qualities of another breed.

The Australian Arab Horse Society maintains a stud book and issues registration papers for part bred Arabians. Registration in this stud book not only makes the horse's breeding identity a matter of permanent record, but the registration certificate accompanies him throughout life, attesting to his bloodlines, his eligibility as a breeding and show horse and enhancing his prestige and value.

Shows and classes for part bred and Anglo Arabians have more than doubled annually in recent years.

The part bred Arabian Registry is a unique one, it is one of the very few and by far the largest for partbreds of any breed. The big reason for this is the Arabian's capability of so dominantly stamping his progeny.

Foals to be eligible for registration must carry at least 50 percent pure Arabian blood.

The difference between the Anglo Arabian and the part bred Arabian is that the Anglo Arabian is a cross between Arabian and Stud Book thoroughbred. A separate register has now been started in the stud book for the progeny of pure Arabian and Stud Book Ponies.

The part bred Arabian is a horse with a past as old as time and with a definite future because it is capable of true versatility – pony club, show work, jumping, dressage, one and three day events, camp drafting and general stock work – the real "get up and go" horse.

FARMERS' WORLD

BRINGS TO THE MAN ON THE LAND NEW FARM DEVELOPMENTS BOTH LOCAL AND OVERSEAS

ARTIFICIAL SUNLIGHT

The high intensity searchlights, used to eliminate the Saturn moon rockets at night, are being considered as a means to duplicate natural sunlight for accelerating crop growth.

The lights at Cape Kennedy consist of a battery of 50 20,000 watt shortarc bulbs filled with xenon gas.

In an agricultural application, the lights would duplicate the radiation of sunlight as filtered through the earth's atmosphere and thus stimulate the photosynthesis process used by plants to achieve growth.

If successful, this effort may make it possible to duplicate both the lighting intensity and the light dark cycle to create the best growing conditions for plants – in effect, starting the day earlier and extending it longer for those crops and food animals that can benefit by such lengthening of light periods.

By combining this capacity with already achieved techniques for controlling temperature and moisture in hot houses, it would be possible to establish an additional crop season for areas of moderate climatic variation.

CUSTOM FIVE STAR MOTOR OILS

Twin products to Caltex ASTRON, the CUSTOM FIVE STAR MOTOR OILS keep your lubrication system working well. They protect your engine against wear. Keep it working better for longer. You can count on more from Caltex.

NEW RUST FREE WHEAT

The NSW Department of Agriculture has released Eagle, a new wheat variety completely resistant to all known strains of stem rust.

Sowing is recommended in the central and southern dryland areas.

The average yield of Eagle from 72 experiments in these areas in 1969 was 36.8 bushels, compared with the variety Falcon which grows in the same areas and yielded only 32.5 bushels.

In the previous 1966-1968 seasons, inclusive, when rust was not a problem in the centre and south, average acre yields of Eagle from 151 experiments was 31.1 bushels.

MARFAK GREASES

MARFAK is the big protector for all machinery. Choose from a wide range of MARFAK greases – there's one to suit your need, like MARFAK Multi Purpose 1, 2 and 3, and MARFAK All Purpose, a high pressure grease capable of withstanding high contact pressures.

QUEENSLAND TRICKLE IRRIGATION PROJECT

Trickle irrigation, a system which can reduce water usage by 75 percent, is being tested in North Queensland.

But research workers are not over enthusiastic about its use, particularly in annual crops, for two reasons:

- Normally there is sufficient water available in most parts of North Queensland for conventional irrigation.
- There are a few problems with the system, though these do not appear insurmountable.

The trickle irrigation trials are in tomato crop in Bill Ayles' property in the Bowen district. They are being conducted by officers of the Department of Primary Industries with equipment supplied by the Irrigation and Water Supply Commission.

A Primary Industries officer closely associated with the project is Ross Wright, a horticulturalist at Bowen Research station.

Commenting on the future of trickle irrigation, he said: "It may not have much of a future in the Bowen district. Last year was the first time we ever had severe water restrictions, and unless there are years of recurring drought, I can't see it coming.

"It's also too expensive a method to use on annual crops. It may have more application on perennials."

TEXAMATIC FLUIDS

TEXAMATIC FLUIDS have been specially formulated to keep automatic transmissions clean and protected from rust and corrosion. They're stable at high temperatures, and have the approval of equipment manufacturers.

DRY EWES DON'T PAY

Dry ewes at lambing times are costly, unnecessary passengers in the breeding flock.

If lambing percentages are to be increased, the usual percentage of around 20-25 dry ewes must be eliminated or at least decreased.

Investigations carried out have shown that low body weight of ewes at joining was a major contributing factor to the number of dry ewes in the mob.

It was also found that in mobs with 20-25 percent dry ewes, maiden ewes were primarily responsible for this loss of lambs.

Reasonable lambing percentages were obtained only through the twinning ability of older ewes.

The number of dry ewes will not be decreased through longer joining periods or more rams, but from heavier body weight at joining.

It is not possible to have a ewe over-fat for joining.

The grossly fat ewe that does not get in lamb is fat because she is infertile and not infertile because she is fat.

CALTEX ASTRON

Clean up with Caltex ASTRON. It makes your engine more efficient – keeps it clean. You get more miles to the dollar from ASTRON – the money saver!

TAIL BITING PIGGIES

Tail biting is one of the problems associated with intensive pig housing and is something which should be watched.

It has occurred over the years where pigs have been in confined areas, usually on concrete or slatted floors.

The loss of a pig's tail is not really of any great commercial significance, but when infection sets in, as often happens, complications can arise with drastic effects on the pig's growth.

Few pigs die from the effects of tail biting, but there can be considerable economic loss through marketing pigs in poor condition as a result of tail biting.

10.447

THE MONEY-SAVERS: CALTEX FUELS KEEP YOUR MACHINERY CLEAN AND PROTECTED

A $5M INDUSTRY

THE SWEETEST ROBBERY ON EARTH

Inscribed into history in hieroglyphics 4000 years back; accepted as part payment for rent by the Saxon lord of the manor; and for many centuries considered the panacea for all ills, honey and the honeybee have had a long and glorious history . . . and the future looks just as golden.

by BRIAN BAYLY

ONE OF the few agricultural industries which hasn't been stung excessively by the cost price squeeze over recent years has spent its time building up a 25,000 million strong workforce.

This is roughly the number of bees in the Commonwealth which have made the Australian honey industry one of our most successful agricultural pursuits.

Although little publicised and very much the poor relation of the larger – finance wise – primary industries, the bee industry has poached its way to being the fourth largest exporter of honey in the world, preceded only by Mexico, the Argentine and Communist China, although not necessarily in that order.

Exports on an average total 6500 tons a year, worth nearly $2m, and 80 percent of these go to Britain.

This compares with an Australian production figure of 43,958,000 lb of honey in 1966-67 from 5902 apiarists and 472,000 hives, and an average production of 122 lb per hive. Total value: $4,718,000. Purely production wise, the USA and Russia are the biggest, but large home consumption cuts them out as large exporters.

In Australia, NSW is by far the largest State, with 1990 apiarists producing 21,014,000 lb of honey worth over $2¼m in 1967-68.

Respectively, follow Victoria with roughly one third of the NSW production, then Qld, SA, WA, Tasmania and the ACT, where in the same year 32 apiarists produced 153,000 lb.

Fortunately, the Australian honey industry holds a rare security in today's flustered agricultural world of overproduction, failing export markets, high domestic prices and government subsidies, in that more than half of the honey produced is consumed on the home market by Australians who in 1967-68 each ate 2.3 lb compared with 1.6 lb per head 11 years earlier.

This bestows on honey the most valuable asset any agricultural product can have in this industrial age . . . a constant domestic market, with exports and dependence on overseas markets a major but not dominant consideration.

The export side of the industry is equally fortunate in that it hasn't got all its hives in the one tree. Australian honeys, numbering some 680 varieties, are exported to 70 odd countries in Europe, the Middle East, Asia, Africa, America and the United Kingdom.

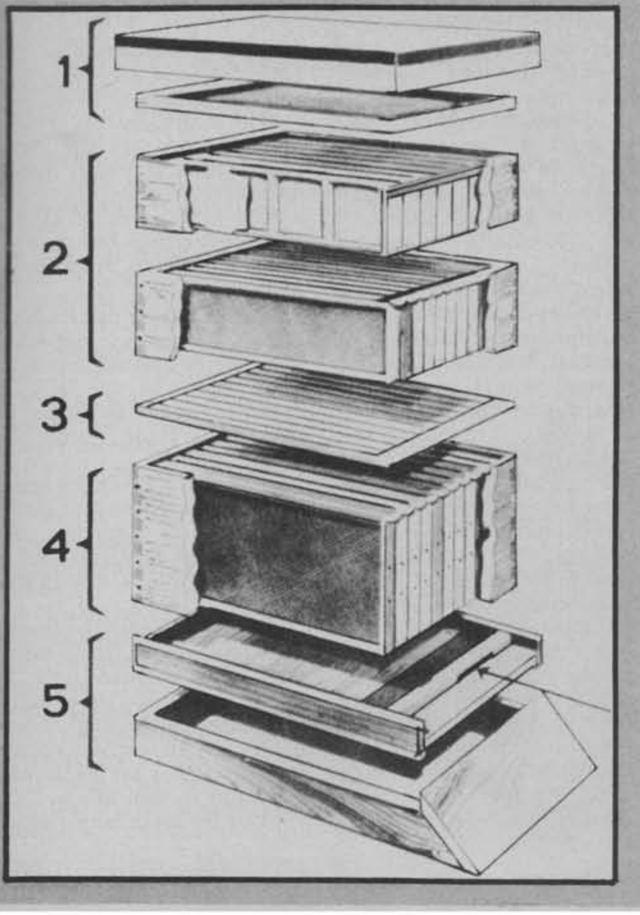
Some interesting facts on the industry are:

- Of the 25,000 million bees in Australia, about 50,000 live in each hive and from 10,000 to 15,000 from each hive forage for nectar daily.
- It takes 300 bees three weeks to collect 1 lb of honey. Yet a single hive may yield 500 lb of honey in a year.
- The record, from Western Australia, is 700 lb from each of 400 hives in 12 months.
- Australia has more than 6000 beekeepers with five or more hives. Of these, 450 are full time commercial apiarists each with over 300 hives. These large producers account for 65 percent of our total production.
- Unwitting fertilisation of flora by the bees is worth $60m a year to the nation's agriculture.
- All hives are registered with State Departments of Agriculture whose apiarist services offer advice to all beekeepers on how to improve the quality and economy of their production.

But despite the stability of the industry, the impressive statistics and seeming prosperity of the industry, the beekeeper receives surprisingly little return when it is related to his initial capital investment to get into the industry.

According to the Secretary of the NSW Commercial Apiarist Association, Clem McIntyre, a potential honey producer needs about 300-400 hives to make a living.

He can begin by buying his hives from another beekeeper or starting off with very small numbers and gradually build-



ing up into a commercial position.

Costs, when there is a reasonable market for bees, can be about $15-$17 for two to three deck hives containing about 40,000 to 50,000 bees.

Capital investment of the beekeeper starting from scratch – to put his unit on the road without any working capital, can cost about $12,000.

Included in this is his working machinery – a truck, in the two ton or larger range; extracting plant comprising a caravan about 7 ft to 8 ft by 12 ft, inside of which we have a $700 extractor, $100 honey pump and sundry equipment, a $150 boiler for supplying heat for cutting the cappings off the honey combs, melting the wax and warming the honey to a temperature where it strains nicely, plus a $50-$100, 120 gallon storage tank.

As you will notice, these figures are very general and imply relative costs for a moderate plant only.

Added to this would be a further $200 for a reasonable capacity cappings reducer, a petrol power unit worth about $150 or maybe $450 for an electric unit, and $50 for a hand wheelbarrow ... or if you feel inclined towards a bit more comfort, $500 for a power barrow.

Obviously, the power units are generally the exclusive reserve of the top beeman, who may have up to $60,000

TOP LEFT:
Hives are smoked to quieten the bees before the frames of honey are removed at an apiary located near Cohuna, Victoria.

A PLAN OF THE HIVE
1. Metal covers help to insulate bees from heat or cold. 2. The "supers" or larder. Upper picture shows beeswax comb in individual boxes for surplus honey . . . lower, shows full frames for storage honey which may be extracted from the comb or cut from it in chunks. 3. Special frame or "queen's excluder" to keep the queen in the brood chamber below. 4. Deep "super" for the brood chamber, or nursery. 5. Upper pic shows the bees' doorway, a small wooden bar that can be arranged so as to make the entrance smaller or larger. The lower pic is a stand to keep the hive from the ground.

TOP RIGHT:
As soon as the combs are filled and wrapped with beeswax they are ready to be harvested by the beekeepers who inspect their hives to see they are ready.

RIGHT:
Boxes of honey frames on their way to an extraction plant.

or $80,000 invested in the industry.

The beekeeper's biggest investment, however, is his truck. And his biggest costs – transport, which account for some 58 percent of total fixed annual costs.

In contrast, grower returns for the choicest of honeys is only about 10 cents per pound which, according to Clem McIntyre, results in the beekeeper receiving a wage below that of the average working class Australian.

To come up to par, the beekeeper would need about 12 cents per pound, he says.

Working on an average keeper with about 427 hives, each producing 180 lb of honey per year, we get a figure of 76,860 lb of honey being produced . . . and sold for an average of 8.8 cents per lb. This was the average price taken over a three year period ended June '68.

During that time, the beekeeper sold his honey and beeswax for about $7,263 in a year, says Clem.

The beeswax accounted for about $500 of this.

But then . . . his costs reached a fantastic $6259. This accounted for some 21,000 truck and car miles worth $3600, labor $473, plus additional and varied sundry costs. Fortunately, he receives an $845 or 7½ per cent interest allowance on his capital outlay, bringing the average beekeeper's annual income to around the $2000 mark.

This is not much for the amount of work put in. But then again how many full time commercial beekeepers do we have in the "average" class.

The beekeeper is a solitary sort of person. He leads a nomadic life going walkabout with his bees. Following the honeypot, he may move his bees over an area of 3000 sq miles, travelling up to 500 miles from his base.

The hives are set out on surveyed locations, with an abundance of a particular flower rich in nectar and a water supply nearby.

This nomadic custom, together with Australia's long hours of sunshine and unrivalled range of nature's trees and blossoms allows the beekeeper to harvest honey throughout most of the year.

The main production period is from October to May, Australia's warmer months.

Most beekeepers transport their honey laden frames from the different hive locations to a central extraction plant. However, some who travel long distances take along their own mobile extraction unit.

The beekeeper today is in a much sounder position than he was, say 10 years ago, when overseas interests particularly, could play one beekeeper against another in order to obtain honey at the cheapest possible price.

But things have changed since the establishment of the Australian Honey Board in 1963.

The Board is financed by a .4 cents per lb levy on honey sold on the domestic market. This raised about $100,000 which is channeled into administrative, promotional and general sundry costs.

The Board has moulded the industry over the past seven years from a widely spread disintegrated industry into a united force, able to control all export prices and do away with the cheap horsetrading tactics.

To help carry out its duties after a shaky beginning, however, the board appointed sole agents in the UK, to enable them to fix the minimum grade prices for honey.

Since then two joint agents have been appointed to handle exports to Germany and Austria and keep an eye on Britain's potential union with the EEC.

In tightening up the reins, it was laid down that honey could be shipped only by exporters registered with the Commonwealth Department of Primary Industry. As of this moment, there are 14 licenced exporters in Australia.

And by establishing power

to fix the export prices of honey, the board considers it has added extra stability to the industry.

Prior to price fixing, export values were determined at the London rate, where most of our export honey goes, and where in 1957-58 the selling price was 100 pounds sterling per ton. For September 1970, just passed, it was 145 pounds sterling.

The Board is made up of packer and producer representatives from each State, although Qld has only a producer representative and not so long ago the Tasmanian people opted off the board altogether.

The chairman is a government appointment and usually a beekeeper.

So with the exception of British entry to the EEC, the export situation seems very sound. But the British/EEC union could spell trouble.

At the moment, Australian exports to the UK enter duty free, whereas exports from other than Commonwealth countries are loaded with a five percent tariff.

If Britain joins the EEC, we immediately lose this advantage. And to cap it all, any imports into EEC countries, of which Britain will be one, get slugged with a thunderous 28 percent of value import duty.

It naturally follows that the British housewife who is now buying her honey for about 30 cents per lb, and in the EEC will be paying about 70 cents per lb, could set up some substantial buyer resistance to honey.

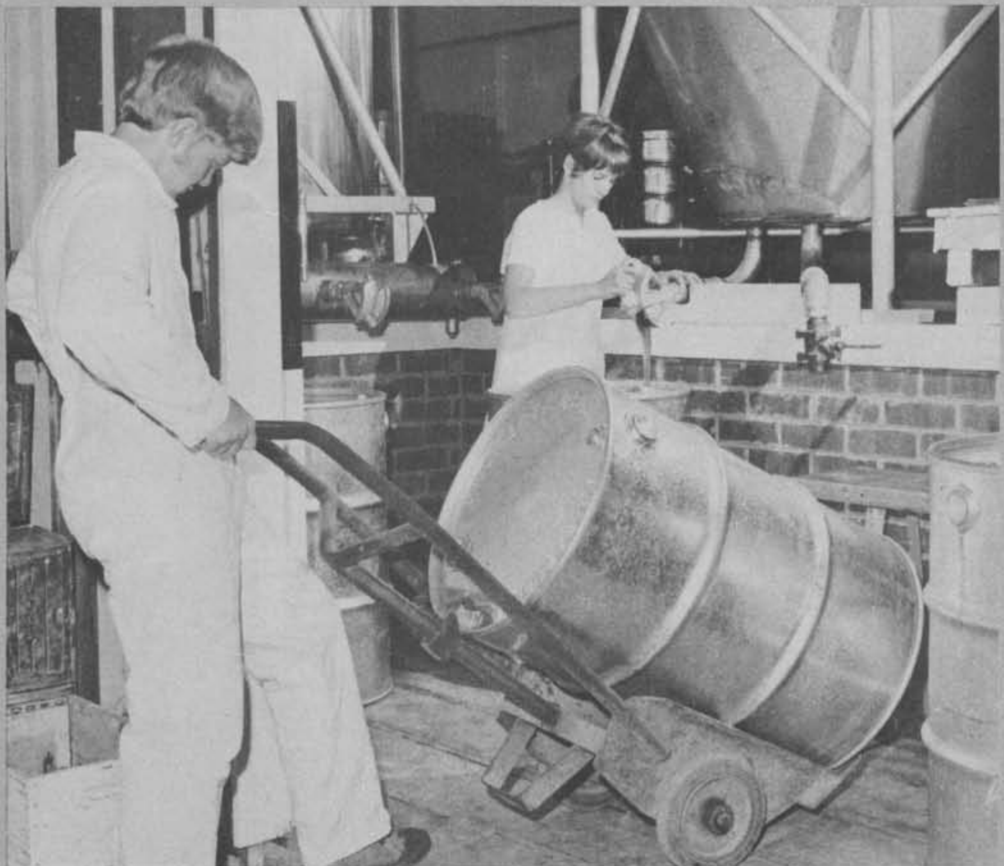
General manager and secretary of the Australian Honey Board K. A. H. Read expects this could result in a cut in honey consumption in Britain temporarily, but that's all.

Mr Read's main worry at the moment seems to be obtaining higher returns in some manner for the producer.

To achieve this, the board and the Beekeepers' Federal Council at one stage formed a minimum price scheme in order to lift the returns to producers and equalise the lower export values with the higher domestic prices. Currently, producer returns from export honey, are about nine cents nett, but this is the highest since 1963-64.

Setting up his mobile unit on new pastures, the beekeeper can travel distances up to 500 miles from his home base.

Hives are placed on a truck for transportation to a caravan or central plant, for extraction.



Filled 44 gallon drums are removed from the filling bay at a Victorian extraction plant.

The scheme was approved in principle by Qld, NSW, Vic and SA, but was rejected by the west, which ironically, is the largest exporter of honey and would subsequently appear to have gained the most from such a scheme. So there's no scheme as yet.

But, so long as the major part of the honey eating is done on our own side of the fence and consumption increases in relation to production, our beekeepers should be pretty safe from the perils which have cruelled our other primary industries.

In addition to the role played by the bee directly related to honey production, however, this amazing little creature can also have a tremendous bearing on crop and pasture production. As has been noted, the value of crop fertilisation in Australia by the bee is estimated at some $60m.

An example of this is that lucerne seed yields can be increased by up to 300 percent if well managed hives of bees are used for pollination of the seed.

Bees are major pollinators because they are easily controlled; populations are easily increased; and hives can be moved to new situations as required.

Efficient pollination can only be obtained by using strong hives which are carrying large numbers of young brood.

Hives should be placed in small groups throughout the paddock to provide a full coverage of the crop.

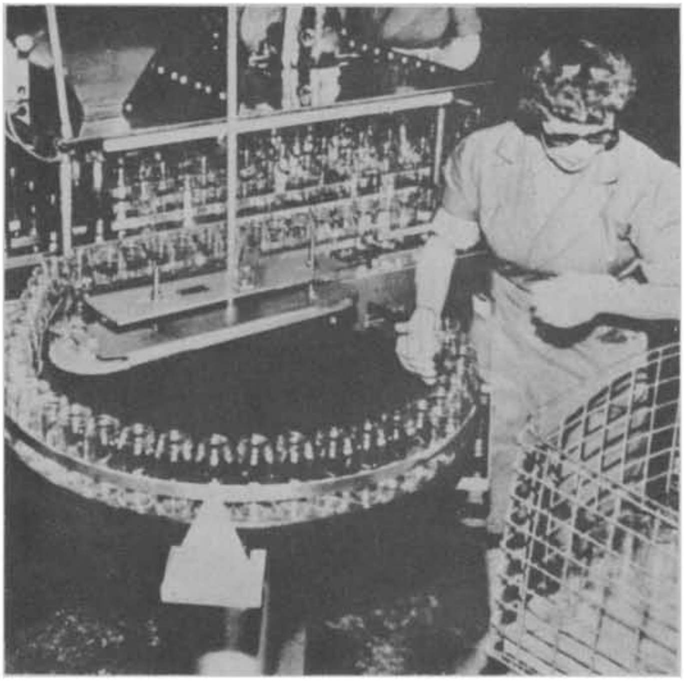
One third of the hives should be moved into the crop at 10 percent flowering and the balance at full flowering. Hives moved in too early may locate alternative sources of nectar and pollen, so this should be watched carefully.

Pesticides also are a major problem. While destructive pests must be controlled, pesticides least toxic to bees should be used. Spraying will be less harmful if carried out in early morning or late at night. But never spray directly onto hives.

So the next time you get stung by a bee, don't curse the poor fellow. He's playing a mighty role both on the practical and economic fronts of our agricultural scene.

In the extraction process, wax cappings are removed with a steam heated knife or special revolving blade before the comb is placed in the extractor, as above. After this, the comb is placed in revolving baskets and the honey is thrown clear by centrifugal force.

After the honey has been strained, and left to stand till air bubbles rise, it is skimmed to remove surface bubbles and any left over wax pieces. It is then ready for bottling — one of nature's finest and most health giving foods available to man.



FOOD CHAIN PROMOTES BEEF

An American organisation has established a beef sandwich industry in Australia promoted along the lines of the fried chicken industry that has won a big slice of the takeaway food market in the past year. It could provide a promising outlet for prime beef producers.

by I. R. CARTER

THE BEEF "sandwich" – a roll here, called a bun in the US – is a popular takeaway snack in America.

The roll, four inches across, is toasted, buttered and filled with a quarter of a pound of prime grilled steak cut thin and seasoned with a choice of barbecue or horseradish sauce.

It makes a tasty meal.

Now a prominent US representative in this field, Beef-a-Roo Pty Ltd, is testing the potential for a similar industry in Australia.

It has established in Melbourne the first two beef "parlors" – the forerunner of a possible 200 in the seven main marketing areas in Australia in the next seven years.

The two parlors serve take-away beef sandwiches and beef burgers. The pig man gets a hand, too, with specially-cured ham sandwiches as their third line.

The beef sandwich sells at 69 cents, the beef burger at 49 cents and the ham sandwich also at 69 cents.

The extension of the parlors is not expected immediately to induce Beef-a-Roo to contract beef from food lots. In the foreseeable future, suppliers say, enough prime beef will be available.

The possibility, nevertheless, is there.

American Paul H. Spaulding, resident Beef-a-Roo director (he holds the Australian franchise from Beef Ranch Inc of Illinois), chose the Melbourne retail and wholesaler butcher F. Watkins Pty Ltd to supply the special cuts of beef he wanted.

Alec Watkins went to Chicago to inspect Beef Ranch suppliers and check the exact needs.

American and Australian butchers have different names for cuts of meat and they cut the meat differently, too.

Watkins buys at the weekly Newmarket sales and from some of the bigger wholesalers.

No particular breed is chosen – only cattle in prime condition with the right kind of meat.

The remainder of the carcase is cut for boning meat, particularly for the US market.

According to the Watkins' company they will be able to supply Beef-a-Roo wherever they set up new enterprises in other States.

Only four cuts of the round steak used for the sandwich can be obtained from each prime bullock. They are 100 percent lean and are regarded as about the choicest cuts. Watkins are supplying 400 cuts a week.

The Watkins company also cures ham for Beef-a-Roo according to specification. They use what is known as a Prague ham – a prime pork leg smoked and cooked.

Paul Spaulding says he and his sponsors soon found in their preliminary survey of the Australian market they would be courting disaster if they used the name Beef-a-Roo above their beef parlors.

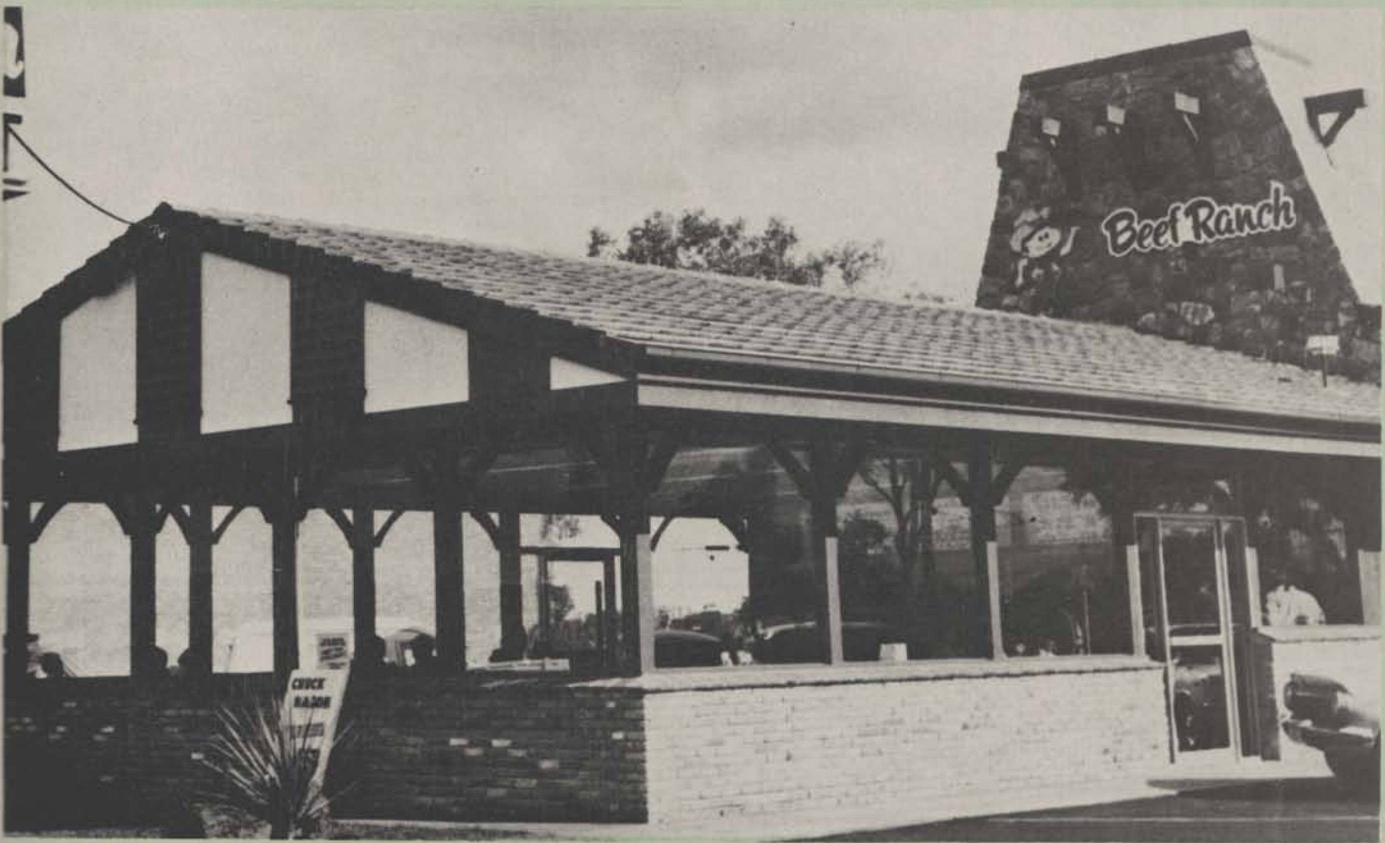
The name is based on "buckaroo" – a ranch hand – and in the US gives an outdoorsy Western flavor to the rough-hewn solid timber and brick ranch-style parlors.

Here, they found, it would be indicating kangaroo meat was in the sandwich.

Melbourne will ultimately have about 20 parlors. Before that, they will be set up successively in other main centres: Sydney, Brisbane, Perth, Adelaide, the Gold Coast and possibly Hobart. Each is leased and run by local franchise holders.

Melbourne was chosen to open the deal because it was felt Melbourne was the toughest market to penetrate. If Melbourne accepted the parlors so would the other cities.

Paul Spaulding migrated to Australia in 1969 and before that was marketing manager of the 1700-store J. C. Penny retailing chain in America.



THE JAPANESE WANT THIS GOOD OIL

Japanese interest in rape seed looks as though it will lead to a flourishing new industry in Western Australia.

by PATRICK MULLALLY

BIG SCALE production of rape seed now seems certain to become an established venture for many Western Australian farmers.

However, it will be at least another season before the tonnages to support a thriving export trade can be achieved.

Japanese interests came to WA some months ago and told interested farmers they were prepared to pay $80 a ton for the right type of rape seed.

After a series of discussions with businessmen and farmers in the southern areas of the State, the Japanese said that if production figures of 50,000 tons or more could be established they would consider financing an oilseed production plant at the port of Albany.

The Japanese left several samples of seed with the Department of Agriculture and with several farmers to use in trial plots in the Albany region.

The State's first crop of rape was planted in the Esperance area, 500 miles south-east of Perth, in 1968. That was only a pilot crop, but in 1969 about 30 growers tried the venture and 80 tons of seed was the result.

In the past year a total of 27,000 acres of rape have been sown throughout the State and this is confidently expected to double or treble in the coming season.

The expected yield of rape seed has been estimated at 7000 tons or more but this could be cut back because of drought in some south-eastern areas of the State, particularly due west of Esperance.

Somewhere in the vicinity of 2000 tons of this seed was under contract to the WA oil seed processing firm Refinoil. A further several hundred tons will be sold as seed for coming season's crop.

The remaining 5000 tons will be exported and probably to Japan. At present two Japanese companies are eager to buy rape seed from WA.

Marubeni Iida, the firm which left samples in the State, has set as a target 50,000 tons of rape seed and the added long-term benefit of an oil seed processing plant at Albany, if farmers meet that production figure and above.

Representatives of both firms have stated $80 a ton as the present going price for suitable seed, but have emphasised this could change because of world conditions.

The price of rape seed is high on the world market because of a shortage of suitable high oil yielding varieties and the increased demands for vegetable oils.

Consumption of edible fats and oils seems to have increased remarkably over the last five years.

Where reliable figures have been kept they indicate a steady increase per head of population.

Experts in the United States say that the expansion of drive-in eating and take-away meals, which are all fried in oils, has been responsible for the increase.

The same eating trend is apparently developing in Japan, in some European countries and even in Australia.

The big question facing the promoters of rape seed production in the West is whether or not the boom price conditions for the seed can continue until WA swings into full production.

Canada is at present the world's biggest producer of the seed.

Last year that country supplied 90 percent of Japan's 290,000 ton import requirements of rape seed.

Due to wheat restrictions in Canada, farmers there have been going over to rape production in a big way and in the past year the Canadian crop was expected to double that of 1969.

Bigger acreages of the seed on both sides of the Atlantic – Canada and Australia – could spell the end of boom prices for the product. However experts are confident that the buoyancy of the market will continue at about present levels.

This is because the Japanese demand is on the upsurge. Japanese interests have stated their country's demand is growing by about 15 percent a year and this means that by 1973 the country will import about 450,000 tons of the seed – a sizeable increase on last year's shipments.

Information about rape seed production in WA is limited and the Department of Agriculture has launched an intensive experimental program into the plant.

They have had to do this to keep pace with the keen interest being shown by farmers who have had their incomes cut severely by wheat quotas.

In many cases these farmers have the suitable land and already have the equipment. All they want to know is the variety to grow and what to do with it.

The department's research station at Mount Barker, situated 200 miles south of Perth, has several rape varieties under test.

Bulk plots of rape in areas of about six acres are being grown and will be ready for harvest at the end of next month.

The station's manager, Mr Doug Rowe, said that the venture was truly an experimental one and he didn't know what the plant was going to do until it had happened.

He said that all officers concerned with the plant were learning as the plant grew.

The main object of the exercise was to obtain as much information as possible for farmers who were keen to know all about rape seed.

Mr Rowe said that the plant did not like much water and seemed to be suited to a drier climate, though he was not prepared to be categorical about the matter. (Mount Barker is in the 3 38 in. rainfall area.)

Agriculture Department adviser at Albany, Peter Stallwood, said that about 1000 acres of rape has been sown in the Albany region this season.

From this area he expected a yield of about 8000 bushels.

This was only small compared with the forecast production figure of 40,000 bushels from the Esperance area.

Modern rape varieties produced small brownish-black seeds about the size of subterranean clover seed.

These seeds which came in small pods contained about 40 percent edible oil which was used for salads and in the production of margarine.

Mr Stallwood said that some better varieties produced as much as 45 percent oil.

Conventional cultivation methods are used for the rape crop.

The oil also had a wide variety of uses in the industrial world.

The by-product meal is a high protein stock supplement.

Mr Stallwood said that the intense interest in growing rape was directly related to the Japanese announcements.

They were definitely keen to establish the industry in the State. To do this they had offered a good price for the start, no doubt with the object of getting the industry off the ground.

In his capacity as field adviser, Mr Stallwood has taken ,out some extensive figures on rape seed production.

They are mainly confined to the southern areas of WA, but do reach into the south eastern wheatbelt.

From a cost analysis for the crop, rape seed marketed at the Japanese offer price of $80 a ton would return to the grower a profit margin of $8 per acre.

This figure was based on a yield of 10 bushels an acre.

Mr Stallwood said that no hard and fast rules could be laid down as far as yields were concerned. His estimate was based conservatively on production trials and average yields over the last two years.

"The average at Esperance last year was 10 bushels an acre and for the moment this is a safe figure to work on," he said.

Actual yields for various farms with different soil types and differing climatic conditions would become evident with experience.

The cost per acre of planting rape was calculated at $12.

This included ploughing, seeding, harrowing, spraying and the cost of seed application at the rate of 6 lb to the acre.

One of the most variable costs of the whole operation at the moment was harvesting.

Many of the growers of rape seed do not have their own harvesting equipment and contractors coming into the area from the wheatbelt have charged as much as $4 an acre.

Mr Stallwood said that if the grower harvested his own crop or several growers combined their efforts the cost of harvesting could be kept down to about $2.50 an acre.

"However, it is highly likely that these costs will stay around the $4 mark," he said.

It does mean however that growers, particularly those in the wheatbelt who are already fully mechanised, will have returns $1.50 better than those quoted above.

The $8 margin an acre return from rape seed compares favorably with returns from oat and barley crops in the area and is, in fact, several dollars ahead.

However, the retrun is only on a par with sheep and is only half as good as beef production.

Beef production for the southern areas of WA shows a gross marginal return per acre of $16.

If rape was to be grown on new land requiring applications of nitrogen, then the cost of production could be increased by $3 an acre.

Mr Stallwood said that rape needed to be grown in an area with an annual rainfall of 17 in. or better with average soil fertility.

Despite the rainfall requirement the plant was drought tolerant and could survive adverse conditions.

Most of the rape seed growers in WA are expected to market their seed through a voluntary pool set up by the WA Grain Pool.

An effort is being made to stop pre-harvest contracts by companies wanting rape seed.

Most growers want all seed to go into the pool so that the sale of rape seed locally and overseas can be handled effectively and to the maximum advantage of growers.

Despite the glamor of export sales, consumption at home is substantially increasing.

A year's requirement for Refinoil, the local processing company, will be about 10,000 tons when production goes into full swing.

Eastern States processors are also interested in obtaining rape seed from WA and demand is expected to increase next year.

Overseas rape oil coming into Australia has recently been subjected to import levies and consequently local processors are anxious to get into business.

The world market in soft vegetable oils is presently dominated by soybean with the United States, China and Brazil being the principal producers.

However, scientists and economists say that rape seed oil can replace soybean oil. They point to Canada as a prime example.

In 1964 Canada's soybean import bill was nearly $60 million, but now it is only half that amount because local production of rape seed has been stepped up.

WA then seems poised to move into another facet of agricultural production. The prospect comes at a time when many farmers are anxiously watching their traditional markets for primary products dwindle.

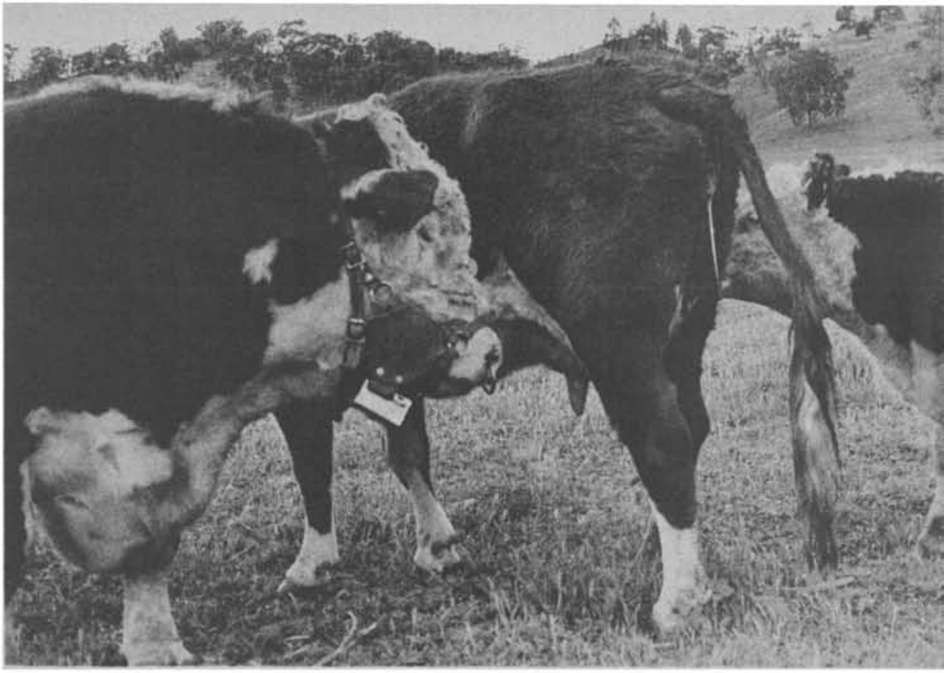
The only questions to be answered are: can they produce high enough yields, with the correct oil content.

In this paddock, on the Mount Barker Research Station there are six acres of rape. The station's manager Mr Doug Rowe, indicates the height of the crop. It stands about three feet high and has a bright yellow flower.

Tuck-in time: Poll Hereford cows and calves feeding at a hay stall.

AI LIKELY TO SPEARHEAD BEEF PROGRESS

Geoffrey Quinn with inseminator Duncan Maclean.



The marker harness used to spot cows ready for insemination.

Confidence in the ability of Australian cattlemen to adapt artificial insemination to range breeding has prompted a group of young graziers and veterinarians to embark on an enterprise which, if successful, will place it at the front of a new industry.

JACKEROOING, for Geoffrey Quinn, straight from Hawkesbury Agricultural College after being raised on the land on the Darling Downs, Queensland, was a waste of time.

"I was just not learning enough," he said.

So he took a job with a chartered accountant in Sydney before going back to the land – his own property at Coonabarabran.

Since then this 28-year-old grazier, because of the death of his father, has been obliged to devote much of his time to the family business in Sydney.

But his prime interest remains the land. His progressive ideas, backed by a solid background of experience in the farming and commercial world, indicate he is one of the young men to watch in this country's pastoral future.

He is the prime mover in establishing a NSW company for the sale and export of cattle semen in Australia and abroad.

He has studied in depth methods whereby beef cattle herds can be inseminated artificially – a breakaway from conventional dependence on natural mating.

Five years ago Geoffrey Quinn wanted to get some dairy cows inseminated for vealer production. His only source of semen was the Milk Board centre. But it had no service to inseminate in the district or any other district far outside the Milk Board area.

In those days liquid nitrogen was not being used – only dry ice – not efficient enough to ensure success with the semen by the time it arrived.

By the time Geoffrey Quinn had established his Poll Hereford stud about three years ago the Hereford breed societies had liberalised the use of AI – a forward move for the cattle breed.

He visited the US the next year and spent a considerable time on stud properties there – and all had large AI programs. This indicated to him the way AI could be used in beef herds in Australia.

Last Easter he bought a threequarter share in the Poll Hereford bull Springfield Hiawatha for $14,000. A quarter share consisting of semen rights only was retained by his breeders S. K. and C. Hawkins.

This was believed to be the first "share" of a bull ever sold at auction in Australia – a logical development in line with the now popular practice in the US.

At a gathering of friends discussion arose about the use of AI and from this the idea of a company was formed resulting in the present enterprise Artificial Breeders (International) Pty Ltd.

The company chose as their headquarters the historic old Moonby House property on the New England Highway, 14 miles north of Tamworth, covering 53 acres of land.

The fine old home has been renovated and converted into offices and laboratories.

Already demand has been heavy from overseas for quantities of semen – Murray Grey, Poll Hereford, Brahman and AIS.

The directors believe most breeds of Australian cattle have much to offer the rest of the world in terms of quality, particularly to the US, Canada, New Zealand, Asia and Africa.

Ultimately the company intends to have distribution and custom collection centres in all States.

The bull selection panel for the centre will be chosen from among the dozen shareholders. They have some sound and experienced cattlemen in their ranks from which to chose. The six directors are all graziers or veterinarians: Geoff Quinn himself a grazier and businessman, R. J. L. Williamson, a Coonabarabran vet, P. J. Magennis, a grazier from the same district, and from Tamworth a vet, D. I. Bryden, and B. N. Chirlian, a grazier.

ABI will specialise in the storage, sale and distribution of beef semen and will eventually have available for clients some of the top bulls of the major breeds in Australia.

Geoffrey Quinn said the objects of the newly formed group were:

Geoffrey Quinn's property is eight miles from Coonabarabran in the mid west of NSW.

It covers 2400 acres of easy rolling country with a big variation of soil types. Rainfall is 28 inches annually.

Pastures are predominantly improved and comprise a combination of phalaris, coxfoot, ryegrass, sub and white clovers and lucerne.

About 35 acres can be irrigated from wells on a creek which runs through the property.

Over the six years Geoffrey Quinn has owned the property he has spread a total of about 10 cwt of super an acre from the air and compound fertiliser on the arable land.

He grows about 400 acres of oats annually.

Cattle on the property include a Poll Hereford stud, Woburn, of about 70 breeders, a Brahman stud, Jinah, with 55 breeders, and about 40 commercial cows.

The property also carries 2100 first cross Border Leicester-Merino ewes.

Two other properties are leased to run in conjunction carrying a total of 550 Poll Hereford and Hereford breeders.

Are you planning to use A.I.?

. . . then Union Carbide has the semen storage equipment for your needs. Pioneers in the development of cryogenic equipment throughout the world, UC are proud of the part they played in the establishment of A.I. in Australia's beef cattle industry. See our comprehensive range of liquid nitrogen semen storage refrigerators and transporters to meet the demands of both small and large grazing operations.

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.... that's what they say about them, but there aren't many around with full performance information as well. Are there ?

Female Sale: February 24, 1971
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We welcome enquiries for our Proven Stud Sires.

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Phone: Bombala 354.

Veterinarian R. J. L. Williamson, one of the directors of the AI company, gives some dental treatment to a horse at Tavistock.

- To promote the widest possible use of top beef sires in Australia and thereby more rapidly uplift the standard of beef cattle in Australia.
- To provide a custom collecting service for stud breeders as an insurance for their future against the death or sudden incapacity of a sire.
- To promote AI as a means by which Australia can assist other countries of the world to upgrade their cattle.
- To import semen from breeds new to Australia, such as Charolais, Simmental and South Devon.

He said it appeared likely the centre would be able to develop an important export trade in beef cattle semen.

"With good management practices it is possible to achieve high conception rates.

"Therefore, taking into consideration the value and quality of selected sires, herd improvement can rapidly be achieved at a more than favorable cost compared with the average cost of ordinary herd bulls.

"Conversely, used haphazardly and indiscriminately the lack of tangible results can be very costly.

"The application of AI on a commercial basis in beef herds does involve the breeder in more work, but only during a concentrated period.

"Today, however, many beef breeders already recognise the successful application this has had in the dairy industry and in other countries of the world."

Artificial Breeding used in a sensible and realistic way can bring tremendous benefits very rapidly in herd improvement.

"If our indicated prospects come to fruition it will provide Tamworth and Australia with an export orientated industry of worthwhile significance," he added.

"Additionally," said Geoffrey Quinn, "the use of artificial insemination of beef herds in Australia is in its infancy."

His company advises the use of a marker harness on steers or vasectomised bulls. They will mark cows coming into oestrus. These must be drafted out and inseminated at the optimum time for conception.

Duncan Maclean, a Scot, is one of the skilled inseminators employed by the company.

"It is most important to detect when they are in season," he said.

"The time of ovulation differs from the oestrus period."

The best time for insemination was when the cows were going off heat.

In beef herds – with cattle on the range – it was necessary to handle the cattle in the yards a couple of weeks before they were due to be inseminated.

Big ear tags made the inseminated cattle easily identifiable.

Geoffrey Quinn has had some interesting results in the saleyards with his vealer Poll Hereford cattle and Brahman-cross cattle.

The Hereford youngsters were a month to two months older than the Brahman crosses.

The top four – Poll Herefords – realised $134.50 a head.

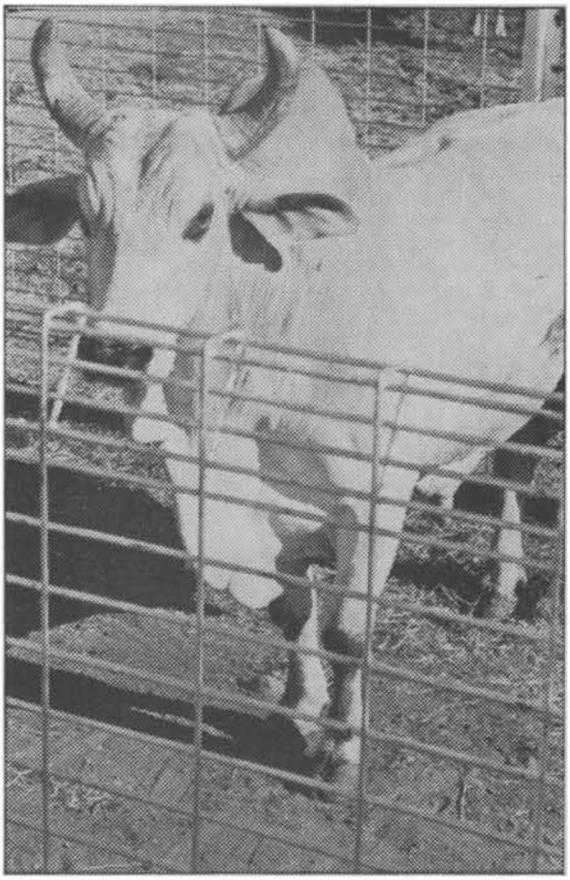
The top four Brahman crosses realised $133.50.

But the Brahmans averaged overall $127.50 and the Herefords $117.50.

The cattle were sold at Gunnedah.

Foundation cows for the Brahman grading up scheme. The Brahman bull on the right is Lowes Omah, which will go to the AI centre.

LONG LASTING



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TRACTOR TEST FACTS:

FORD 4000

The 11th in our series of Tractor Test reports. This month we feature the FORD 4000.

A GENERAL PURPOSE tractor of 48 dbhp, the Ford 4000 features a Ford three cylinder, four stroke direct injection diesel engine of 201 cu in. and a rated speed of 2200 rpm.

Recommended fuel is distillate. Tyres can be either 16.9 or 18.4 by 28 pneumatic.

Transmission is a four speed constant mesh gearbox with a ratio change giving eight forward and two reverse speeds. Maximum speeds in each gear are: F — 1.5, 2, 3.5, 4.7, 5.6, 7, 12.3, 16.8. R — 2.3, 8.1.

Dimensions of the 4000 are: bore 4.4 in., stroke, 4.4 in.

Track widths as tested are: front 54 in., rear 64 in., wheelbase 85 in. Turning circle with brakes: LH and RH 20 ft 2 in. Without brakes: LH and RH 25 ft.

Steering is manual.

Ground clearance is 10½ in. under the drawbar; 16½ in., without the drawbar fitted. Drawbar height is 18 in.

Drawbar tests were done with the tractor ballasted to the maximum recommended by the company for normal agriculutral drawbar work.

Total weight including the driver was 8530 lb (front axle 1930 lb, rear axle 6600 lb). This weight included 75 percent water ballast in the front 7.50 by 16 and in the rear 18.4 by 28 tyres. Solid ballast was 730 lb comprising six segmented weights per rear wheel.

The 4000 is designed for working either with mounted implements directly through the three point linkage or through a swinging drawbar which is supplied as standard equipment.

A fixed drawbar mounting plate 14 in. above ground is provided with 9 ½ in. clearance holes. A swinging roller mounted drawbar runs on this; nine positions are available, 3½ in., 7 in., 10½ in., 14 in., either side of centre.

Height is not adjustable but five hitching positions can be obtained by fitting the clevis jaw above or below the drawbar.

A gear pump located in the rear axle housing, driven from the pto shaft, gives 4.5 gpm at 2500 psi at 2200 rpm engine rated speed, and supplies power for the three point linkage and external circuits.

An optional is the belt pulley unit. This mounts on the pto for rearward working, in either direction of rotation, at 1250 rpm at 2200 rpm engine speed.

Standard equipment includes tachometer incorporating an hour meter, water temperature gauge (band markings only); fuel gauge; generator charging and oil pressure warning lights. Live pto; three point linkage, differential lock, full lighting equipment; fixed and swinging drawbar.

Optionals include the belt pulley unit and wheel weights.

Cost of the standard model is $3817.

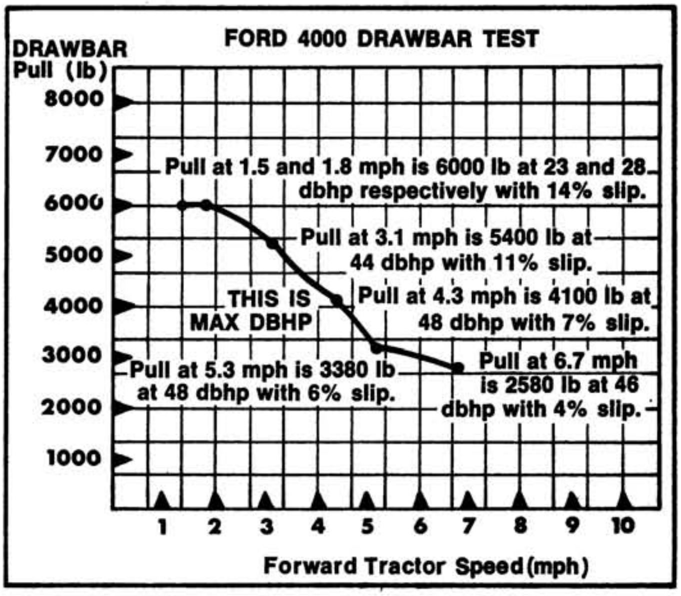
Thus, performance price of the tractor when based on the drawbar hp rating is approximately $79.50 per hp at the drawbar.—END

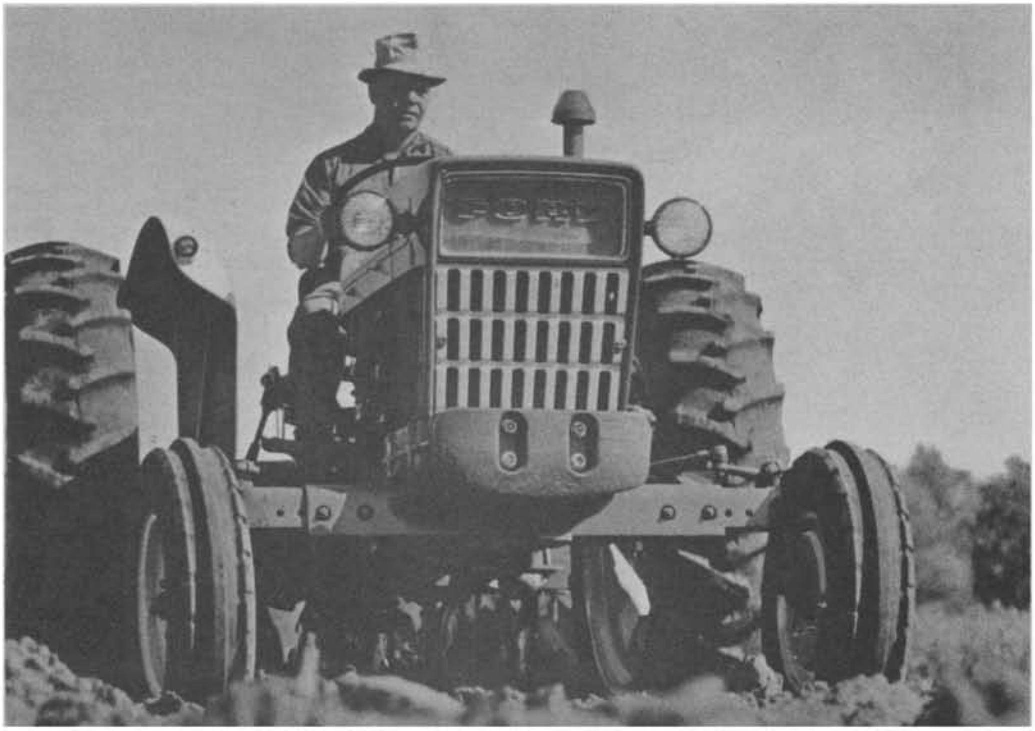
In producing our own abridged, visual tractor test report, we at COUNTRY are not in any way challenging any of the tractor testing station authorities whether they be in other parts of the world or here in Australia.

In fact, our reports are based on the figures originally produced by these people. Our only aim is to break them down into a more readable and digestible form, in an attempt to eliminate the technical jargon which so often results in confusion.

Our abridged versions are adapted from the technical report of the Australian Tractor Testing Committee. The procedures used by this committee are similar in principle to those used by the University of Nebraska and by the National Institute of Agricultural Engineering in England.

A further aim is to bring to light the real drawbar performance of the particular tractor being dealt with. This we feel is the most important fact about a tractor test.

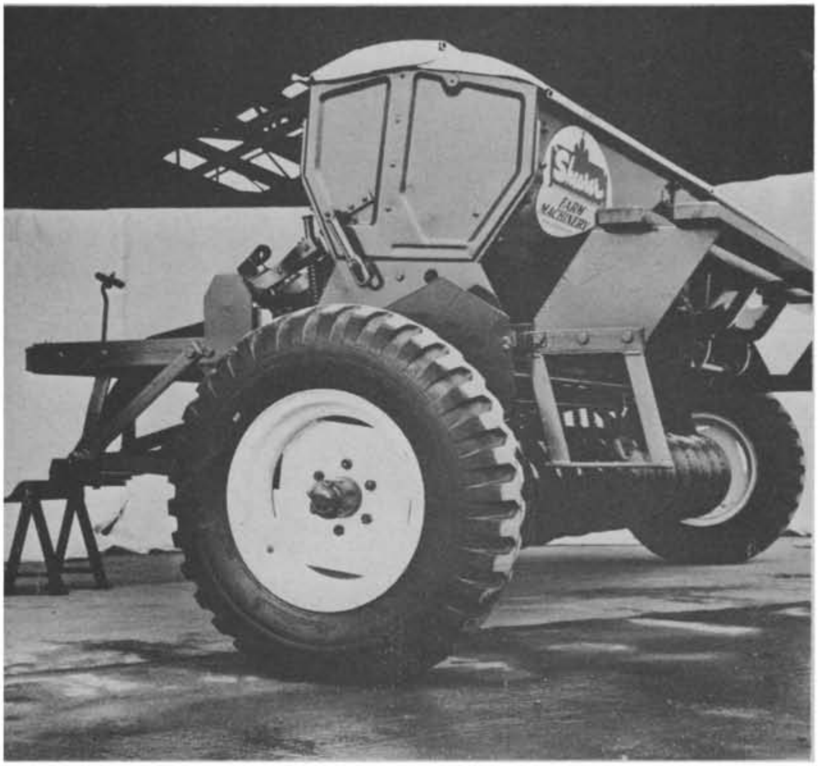




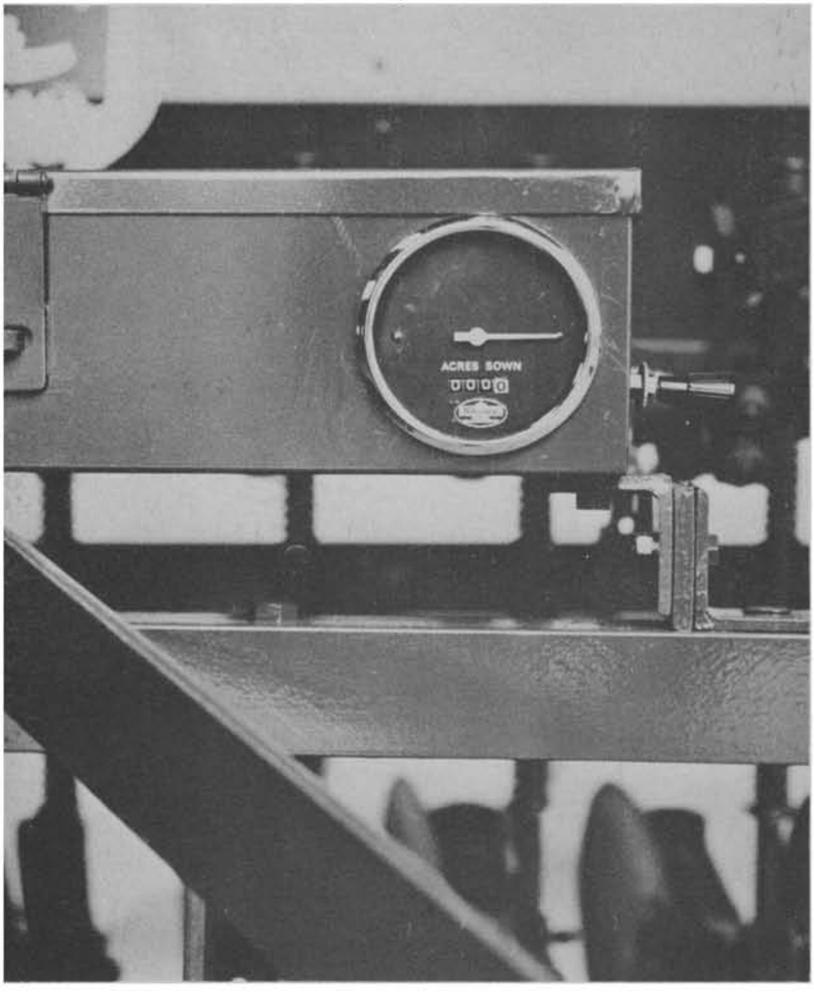
COUNTRY MOTORS &

DUAL PURPOSE SOD SEED DRILL

This month we look at a new and versatile dual purpose piece of machinery from the production plant of John Shearer and Sons Ltd.



The 16 row, 9 ft 4 in. sowing width low wheel sod seed drill. Cost of either of the two models is below $1000.



The enclosed speedometer style acremeter. Needle indicates when seed and fertiliser distributors are in operation.

A LOW wheel sod seed drill designed to sow either pasture or cereal crops with a high degree of accuracy is one of the latest pieces of agricultural machinery on the market.

Available in 7 ft and 9 ft 4 in. sowing widths, the drill has small and large aperture seed distributors controlled by easy change multi ratio gears.

These give the machine the versatility to sow anything from fine grass seeds to coarse field peas at rates varying from 1½ lb per acre to 233 lb per acre.

The seed distributors are located below V feed hoppers at the base of the box. By throwing a flap the seed can be directed into either the fine or coarse side of the distributor. The V feeds also ensure the box is completely emptied.

Each side of the distributor has a sloping ledge which takes the weight of the seed to prevent wedging and cracking and to allow an extremely even flow to the seed bed.

Contra rotating cast iron runner coated fertiliser distribution stars are available and the designers claim these provide an even flow of fertiliser which is directed into the same convoluted rubber tube as the seed.

The implement is fitted with 13 in. diameter spring steel discs which rotate on fully sealed roller bearings. Each disc has an adjustable soil approach angle to give a variable size sod cut.

Adjustable, independent spring pressure is applied to each disc by a pressure rod. This ensures adequate penetration in the roughest soils.

The implement is particularly at home in undulating country as the wheels are in line with the discs to ensure uniform sowing depth at all times. The wheel centre is so located as to give a good co-relation of weight between the tractor and implement.

The main cross member of the frame consists of 3 in. x RSJ spring steel I Beam, which together with secondary 2½ in. angle frame members provides good support to the seed and fertiliser box.

The implement penetrating ability is also enhanced by the use of this heavy steel box.

The 7.50 by 16 by 8 ply lugbar tyres provide positive drive to the seed and fertiliser sowing transmission.

A new speedometer type acremeter provides measurement to 1/10 of an acre and also indicates when the seed and fertiliser distributors are operating. It is mounted in the tool box for protection and easy viewing from the tractor seat.

Fittings are provided for a standard 8 in. ASAE hydraulic ram to lift the discs for road transport.

A grass seed box is also available and this attaches to the rear of the implement above the footboard. The sowing tubes from this box can be directed, by means of a full width bar with clips to drop the seed next to or behind the disc.

The seed and fertiliser box is galvanised for full protection. The capacities for seed are 278 lb – 12 row, 371 lb – 16 row, and fertiliser 535 lb – 12 row, 715 lb – 16 row.

Cost of the 12 row model complete with new tyres and ball race disc bearings is $860. The 16 row model, complete with same equipment is $994.

REVIEWS
MACHINES

On the farm, to carry fodder, to carry stock, to carry you, the Moke is still one of the handiest vehicles you can have.

Quick, convenient transport on the farm.

MOKE—

THE LITTLE MASTER

CROSS-COUNTRY vehicles have come a long way since the first four-wheel drives were introduced.

There are now a dozen or so of these to choose from and an equal number of other oddities designed for specialised functions.

But the Moke doesn't fit any of these categories.

It is neither a four-wheel drive, go-anywhere machine nor a specialised vehicle. Rather it's a highly versatile hack that can be used for hundreds of odd jobs.

There have been a lot of changes to the original Mini-Moke. First the name itself has been shortened – now it's just called a Moke. But the main changes have been to the engine and suspension.

The original Mokes were powered by 988 cc engines. These have now been increased in size to 1048 cc and coupled to a fully syncromesh, four-speed gearbox, giving the machines a remarkably good turn of speed on the open road and also enough power to churn their way through tough stuff.

The other big change has been the fitting of 13-inch wheels which raise the ground clearance to a respectable eight inches.

With the early model running on 10-inch wheels the lack of ground clearance was a justifiable criticism as it was quite easy to ground the sump guard.

The Moke is at no disadvantage in hilly country.

The Moke has a unique system of fully independent suspension. It uses a large rubber unit on each wheel to iron out the bumps instead of springs of hydrolastic system as used in the Mini sedans. These units are particularly good in tough conditions as they are all but indestructible and don't require any maintenance.

The remainder of the machine is equally robust. It has a box frame chassis, solid panel work and a rugged sump guard. Completing the picture are heavy tubular fenders front and rear.

The engine is mounted east

west, this means its entire weight is kept well forward over the driving wheels – it has front-wheel drive like its predecessors. Having the weight there improves the traction.

Although it hasn't the mountain goat abilities of a four-wheel drive the little Moke does have a good amount of traction. And where it misses out on pure traction the charging technique of driving will get it out of all kinds of tight spots.

Because the Moke's suspension is rugged and there is little or nothing to be damaged by pounding into rough going it is possible to get up very steep or slippery slopes by charging at them.

And if you do happen to bog a Moke two people can usually manage to push it out.

From a practical point of view the Moke has many applications on the farm. There is enough space in the back to carry a few bales of hay, it is rugged enough to take a 44-gallon drum of fuel without protesting too much and with the hood up and side curtains down you can take mum to town in it on a wet day.

In fact, on the open road it will cruise quite happily at up to 70 miles an hour for as long as you like.

One irritating point in town, however: The traffic indicator is awkwardly placed behind the steering wheel – it also carries the horn – so that in unaccustomed traffic giving signals can be an annoying procedure.

But, priced at $1510 (including tax) British Leyland's Moke is a practical workhorse well suited to our rugged conditions.

The little vehicle makes quite a comfortable ride in rough going.

Versatile – not out of place in the orchard or on the highway.

This might become a familiar sight if Mrs Kath's lead is followed in Australia.

NOW IT'S GOATS CREAM FOR BUTTER

by VIVIENNE BAXTER

A 170-goat herd in Queensland is believed to be the only one in Australia supplying cream to a butter factory. The skim milk helps to feed 60 vealers.

WITH THE DROUGHT that crippled the dairy herds of southern Queensland it was unusual to find a cream producer declaring that the dry conditions were no trouble at all.

Most farmers husbanded their dairy stock carefully and fed off parched pastures sparingly in an endeavour to keep their dairy production up and stock losses down.

So the statement by Mrs J. Kath of Mindara stud, West Cooroy, "We prefer the dry conditions," startled cattle owners.

Mrs Kath is believed to be the only goat breeder in Australia who is supplying cream to a local butter factory.

The goat's cream is delivered along with cow's milk from the predominately dairy farming areas radiating from the Cooroy butter factory centre.

She runs a herd of 170 goats, about 100 of which are milked daily. At present she is milking by hand, however she hopes to instal machines when her herd reaches 200. This, she hopes to achieve in two years time.

There is no wastage – the separated goats' milk is fed to calves, and up to 60 vealers are turned off the property yearly.

No special fodder is grown for the herd. They thrive on what they forage for on the hilly slopes. "They find plenty of feed," Mrs Kath said, "and they keep the rubbish down."

Locals have long grown used to the sight of the vast herd strung out over the hills, but visitors to the area stop and stare at the unusual sight.

They have indeed proved their worth as first class foragers, however, as two of the does of the herd recently succeeded in taking out the senior and junior milking tests at the Brisbane Show.

The senior doe produced 13 lb of milk in 24 hours, and the junior doe, 5.2 lb . Mrs Kath's Sasen doe Mindara Aleana Petal was declared the champion of all breeds. The goat judge, Mrs R. Marsden of Terrey Hills, Sydney, said the does were outstanding in the goat world.

Mrs Kath and her fellow goat breeders seem to have found the answer to the ever-present pressing problem of drought.

Modern methods mean fresh milk for islanders

DAIRY FARMING

Peter Custance's dairy farm is set in the picturesque surrounds of a unique Pacific island. The buildings in the photo are the headquarters of the convict settlement.

One man's initiative has brought fresh milk to an isolated community that was once solely dependent on canned and powdered milk. PETER CUSTANCE tells how he established a modern dairy farm on Norfolk Island.

WHERE to get away from it all – that was our probelm. Where to get away from 8000 caged layers on our poultry farm near Dromana in Victoria. Where to get away to a nice even climate and semi-retirement.

We travelled around Australia looking for somewhere to meet these requirements and finally settled for Norfolk Island – and twice the work with a dairy farm.

We were lucky enough to get 96 acres in a picturesque setting among Norfolk pines and rolling hills with the Pacific Ocean forming a backdrop.

The farm had once been a dairy, but because of ill health the previous owner had let it run down. When we bought it, it had a predominantly beef Shorthorn herd.

We looked at the local situation and decided that a dairy herd should do well. At the time – 1967 – the island was very short of milk. Condensed milk imports were worth $5000 and powdered milk imports were costing $4100 a year. We decided to set up the island's first modern dairy, run on mainland lines.

There are no health regulations governing the production, processing and sale of milk – in fact there is not much of anything that is restricting: no dairy inspectors, no taxes, no building regulations for farmers, no duty on imports.

These factors help a bit to offset the added costs such as high freights and landing all imports by lighters because the island has no harbor facilities.

An old friend, Jack Green, of the Victorian Department of Agriculture, designed our four-aside double-up herringbone shed and yard layout.

There were no suitable dairy cows on the island. We had the choice of importing foundation stock either from Australia or New Zealand.

We decided Friesians would be the most suitable.

We now have a small Friesian stud and are members of the NZ Friesian Association. We are also joining the Australian Friesian Cattle Club, for we are using a lot of Australian semen – and Norfolk Island is Australian territory.

Tourists come in large numbers to look at the dairy.

Many of these visitors are in fact dairy farmers on holidays. They say it is only on a holiday they have time to go visiting and see other dairies. The fact that ours is a large and modern unit makes it a source of interest to visitors.

Many of our NZ visitors take measurements of the set-up with a view to converting their conventional sheds to herringbone.

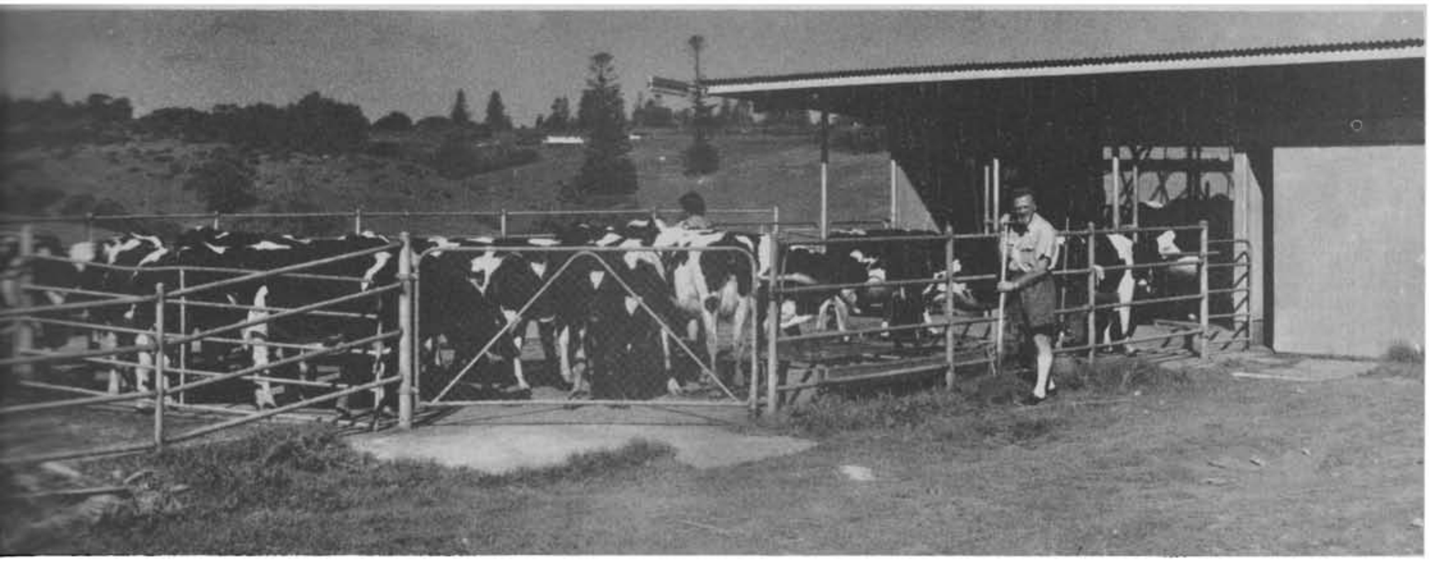
For us the busiest time of the year is around June, for this is the period when the butter fat herds of NZ are dry and the farmers have a chance to get away from the cold to Norfolk's sub-tropical climate before their herds start calving again.

We have installed a new stainless steel plant from Dairymaster in Australia. The dairy bails were prefabricated in Warragul, Victoria, by McKenzies and shipped over and installed with the help of a local contractor.

It is small wonder that there were no cement dairy yards on the island before ours went in. There is a shortage of sand on the island, all the cement has to be imported by ship, and the price of crushed metal is very high because of the small amount of suitable stone.

We were lucky in one way, for just before the cement

NORFOLK STYLE



The only dairy on the island – Peter Custance keeps things looking neat for the many visitors.

ent in a contractor brought in the first ready-mix truck. This saved broken backs from hand mixing.

It is quite an exercise landing imports. The ships have to lay off the island and anchor. Lighters are towed out to the ships by motor launch and the goods – including livestock – are lowered from the ship's deck.

On one occasion the whole back came off a crate carrying a cow as it was raised on the ship's derricks, and there was nothing to stop the cow from walking backwards and falling straight into the sea.

Those on the wharf had a number of very anxious moments as our stock came ashore. We decided on a herd of 50 and placed our order for the first consignment in Victoria in 1967.

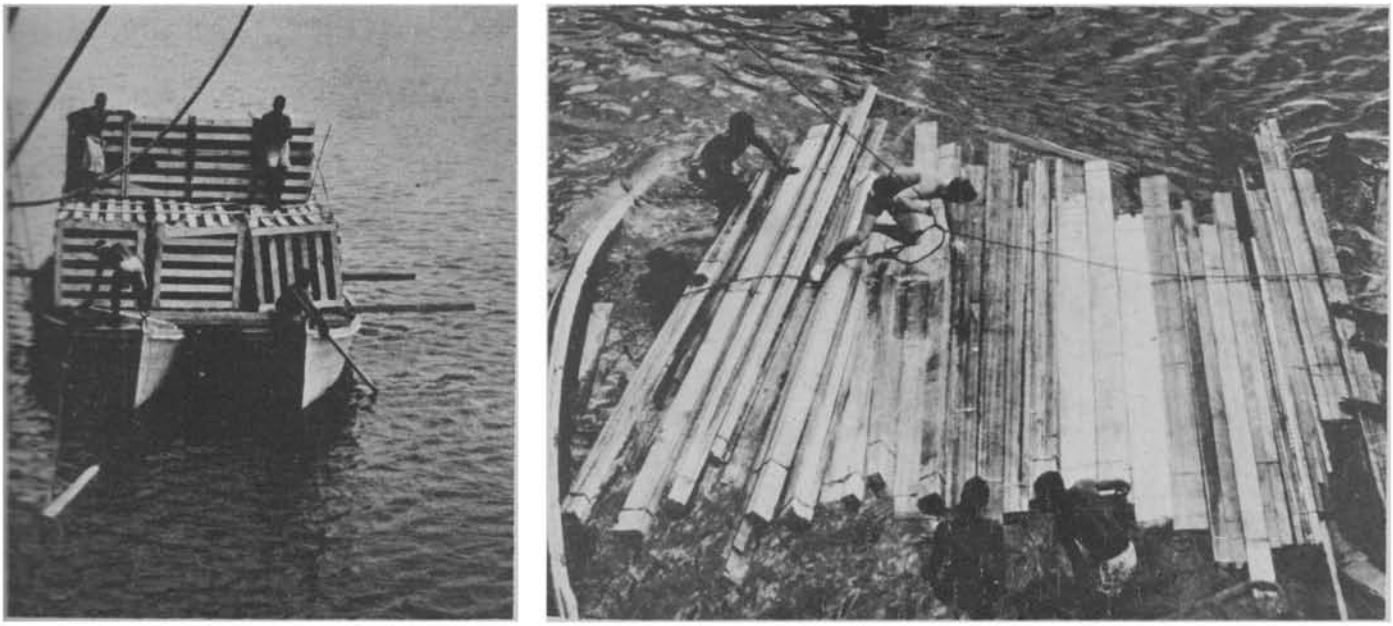
There is only one restriction on the import of cattle into Norfolk Island – they have to be TB tested and certified healthy by a Government vet within 30 days before shipment.

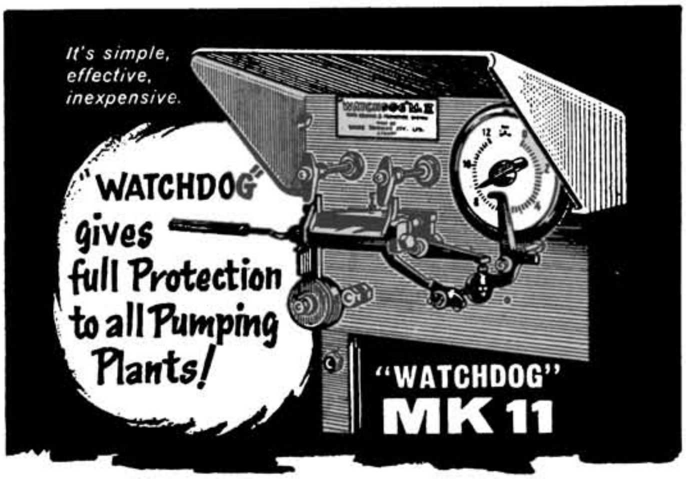
If there is a delay in shipment, then the tests have to be done again . . . a number of them have to be tested twice.

Then there is the problem of shipping the cattle. There are no crates available for hire in Australia and they have to be made and charged to the purchaser. Australian quarantine regulations make it impracticable to return the crates.

The result of all these problems was that wood chips and sawdust were used to form a bedding and the stock were fed on a concentrated dairy ration on the trip over. This

For big loads it's a matter of strapping two lighters together but as you can see this doesn't always end in success.

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NORFOLK ISLAND

Darling, can't we stay here for just two more weeks?
YES!

ASK THE EXPERTS, NORFOLK TOURS,
72 Pitt St., Sydney. 28-3650.

also had its problems as the stock had to become accustomed to the rations prior to the shipment.

As the crates cannot be returned to Australia economically they are designed to make pig pens when we get around to establishing our piggery.

The herd has now built up to 50 head of imported Friesians. Ten only came from Australia and the balance of 40 head from NZ. It is from these 40 the nucleus of the herd was drawn. We use the prefix Weston.

All the cattle were imported as in calf heifers. All were supposedly in calf to a Friesan bull, but some turned out not as promised. We calved a few Angus cross calves, but from now on we plan to use a Friesan sire in the herd, plus imported semen from Australia.

I anticipated problems with breeding the herd before I moved to Norfolk Island. So I attended a course at the Victorian Department of Agriculture research station at Werribee and obtained the artificial inseminator's certificate.

The results of our AI program are now starting to show. Semen was purchased from the Victorian Artificial Breeders' Association at Bacchus Marsh. We are now producing truly international calves – NZ dams, with Australian sires and born on Norfolk Island. Working with other cattle on the island, some Santa Gertrudis cross Hereford calves have been born.

The comparison between the NZ and Australian Friesians is interesting – with the latter showing up a little on the weak side.

We are not particularly proud of our figures so far, but as we continue to organise and improve our management these efforts should show up in better milk production figures. However, we do manage to produce a surplus of milk at most times of the year.

Kikuyu has become the natural grass of Norfolk Island. We sow Japanese millet and green panic in areas cultivated so far. Fencing was from scratch, for the farm was just a paddock when we came.

The main fertiliser needed on the island is nitrogen as the soil is very poor in this element. In places the volcanic top soil is more than 6 ft deep. No super and mixtures such as 20-11-0 have been used.

Because we pay no tax, there is no Australian bounty on our fertiliser purchases. Super costs about $60 a ton – a recent consignment of 20-11-0 cost me $660 for five tons on the farm.

The climate is almost ideal. Temperatures range between 83 degree maximums and 47 degree minimums. Rainfall over the past 15 years has been as high as 76 in. and as low as 40 in. The rainfall average stands at more than 50 in.

However, the rain is not seasonal – heavy in a month one year, dry in the same month the following year. This makes farming as much a gamble on Norfolk Island as most other places. Pastures grow throughout the year – given rain.

One of our problems is the delivery of milk to our customers around the island. At the moment we travel 34 miles a night serving about 150 customers.

There is still opportunity to expand the market, for at present we serve only one of the island's tourist hotels.

Because of the absence of Milk Board regulations, the way of life is fairly elastic with no early morning pick-up to worry about – the first milking starts about 7 am and the afternoon one at 3.15 pm.

All is not perfect on the island. For example, a supply of liquid nitrogen for the semen refrigerator arrived late recently – 10 days late in fact – and a complete stock was lost when the last of the old stock of nitrogen ran out just 24 hours before the new shipment came in.

To solve at least part of the island's meat shortage, we have plans for importing Brahman semen for use on some of our heifers. We are also working with a Hereford breeder on the island – he supplies a bull and we sell him back the crossbred heifers to help build his breeding herd.

Another major drawback is the island had no vet.

We have to make our own diagnosis and give our own treatment to sick animals – a heavy responsibility with costly animals which probably have had to be shipped in. The hazard is all the greater if some infectious disease should break out on the island.

Norfolk Island is a magnificent place to go into semi-retirement; that is, unless you start dairy farming.

$5m factory means
MAXIMUM USE OF FORESTS

As a timber importing nation it is important we make the best use of the timber we do grow. A new board processing plant at Tumut means a more effective yield.

By A. W. BOSSER

UP UNTIL recent years countless tons of potentially useful timber – thinnings from forests – have been discarded because no economic way had been devised to turn them into profit.

The development of processed board provided, wherever the costly manufacturing plants were feasible, an economic use for this waste product.

Such a plant is in production at Tumut, southern NSW. Australian Paper Manufacturers Ltd and the Colional Sugar Refining Co set up the $5 million factory to process timber into Pyneboard sheets – used in a variety of building enterprises from farm buildings to luxurious motels.

It is producing 40 tons of processed board every day or 11 million sq ft a year.

The same group of companies has set up similar plants at Oberon, near the famous Jenolan Caves, Smithfield, on the outer Sydney metropolitan area, and at Rosedale, on the Latrobe River in south-eastern Victoria.

The thinnings, with the bark taken off, are chemically treated by spiky crushers to prevent any growth of mould. They are sawn into short lengths, put into a rotating bin to be fed to the flaking machines, where spinning knives shave them into small flakes.

These are sprayed with a fine mist of formaldehyde glue and come out of the next machine like a long thin mattress.

A huge machine presses them to size and they are sanded and trimmed ready for the final touching up.

Finally the large sheets are fanned out for the drying and finishing off process.

The board can be easily cut or drilled or shaped or grooved with ordinary woodwork tools.

And because there is no grain, just a lot of wood flakes glued together in a sort of particle board, the sheets can be cut in any shape or direction without any loss of strength. This means a minimum waste as practically the whole sheet can be used.

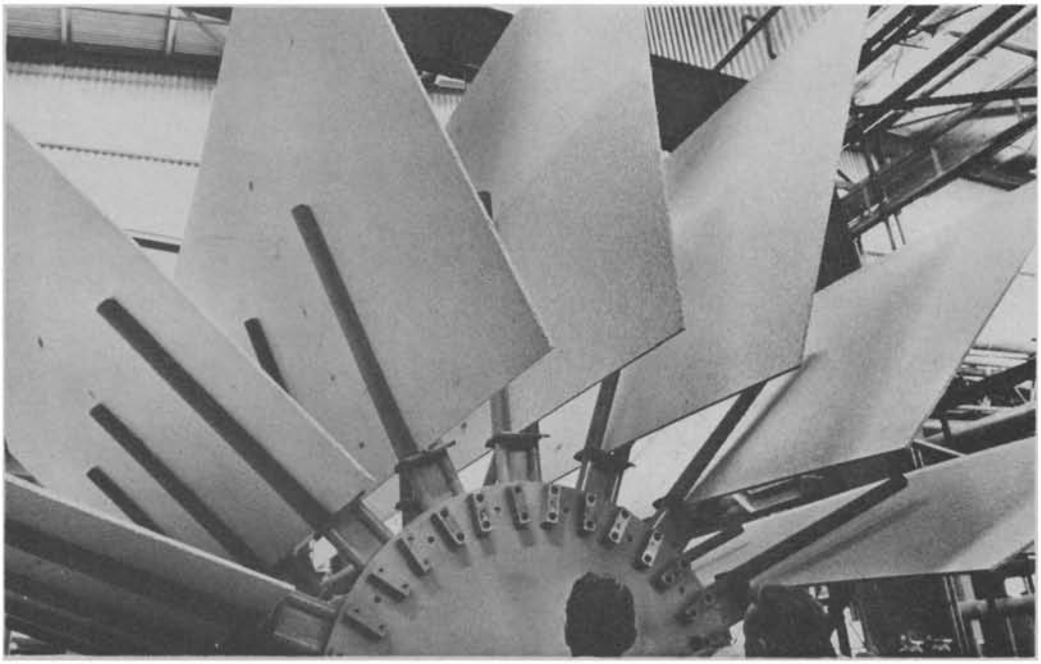
Even the offcuts can be glued and butted together to form larger panels. This previously waste product now finishes up in thousands of new Australian homes in all shapes and sizes and in all sorts of furniture and shelves and walls.

The Tumut project means the keeping of at least a hundred families in the area and - no doubt more when expansion plans are completed.

Forestry Commission pine plantations are numerous in southern NSW. With good rail links and close proximity to the ever-expanding Australian Capital Territory, the market is ready made.

And the Tumut project is doing more than its share to save timber imports currently costing Australia about $200m annually.

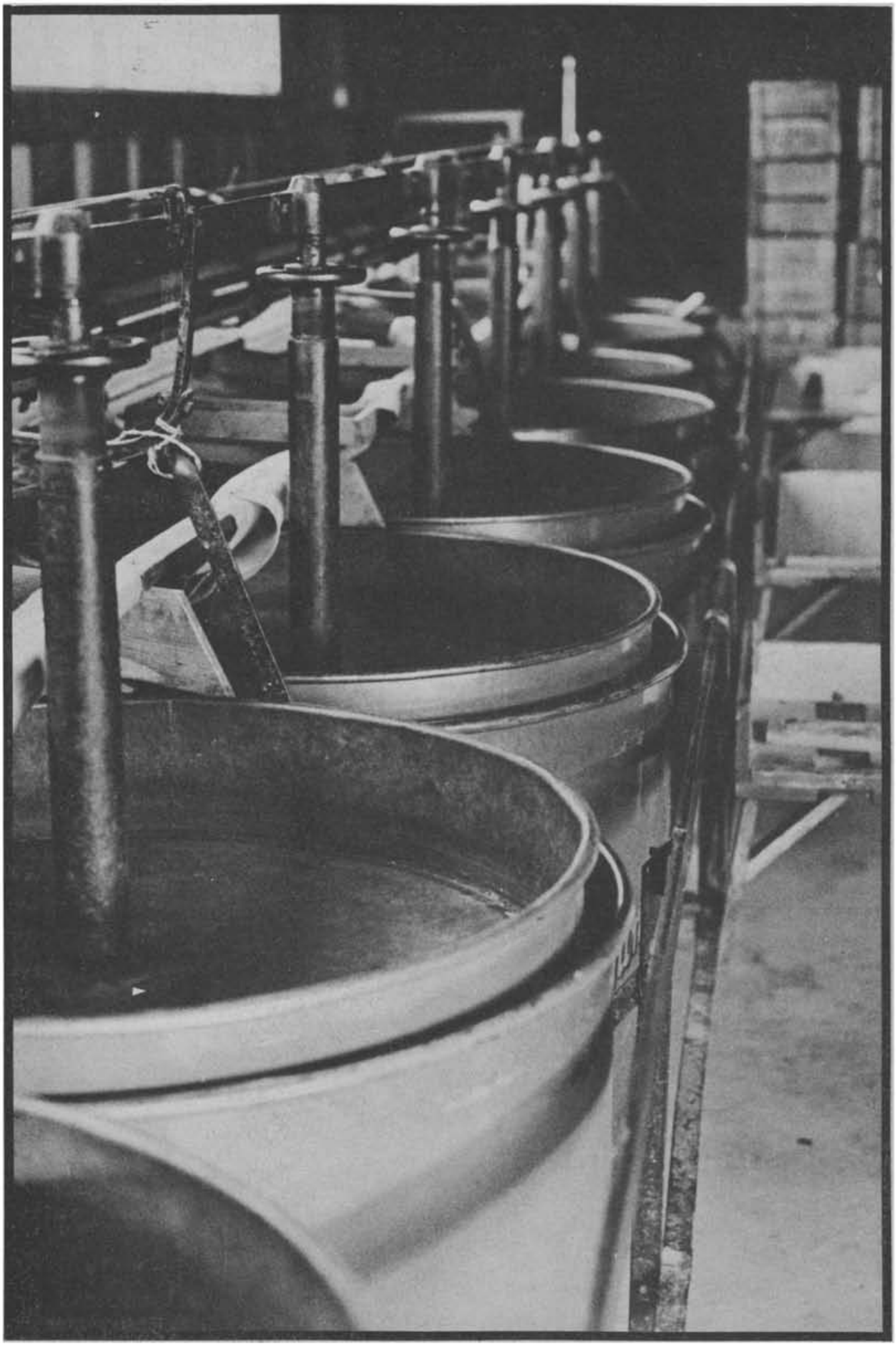
The finished product – processed boards awaiting the finishing touches before despatch.



Timber billets are put into a rotating bin to be fed to spinning knives which shave them into small flakes.

KEEPING UP WITH THE

Controlled Atmosphere storage is the latest in keeping apples fresh year round. But there is more to being a successful orchardist than knowing how to store the fruit in the right manner.



"WE HAVE been orchardists in this area for five generations, and the only way we can survive is by keeping up with modern trends."

Mr Alex Renouf, of Moorooduc, south of Melbourne, was replying to a question from a member of the Shell sponsored RASV journalists' tour of southern Vic.

The Renouf apple orchard run by Alex and two sons features many modern ideas, including a controlled atmosphere (CA) storage plant, built-in irrigation, sod culture and electric powered forklift for shifting bins of apples.

Planting on the 123-acre property began in 1946 when about 40 acres of Jonathan, Granny Smith, Delicious and Gravenstein apples were established. Now this has been increased to 72 acres. The first cool store was built in 1961, with a capacity of 7000 bushels. In 1967 an additional 15,000 bushel cool store was added, and this year the cool stores were converted to CA.

Controlled atmosphere storage is a relatively new method of keeping fruit for long periods. It relies on the fact that the bacterial action of ripening is largely dependent on a supply of oxygen. The CA system used at the Renouf orchard reduces the oxygen content of the air to about 2 percent, also the carbon monoxide content is reduced. At the same time the temperature is kept well down as in a normal cool store.

Mr Renouf said that in the old type cool store the apples were picked green and allowed to slowly ripen while in storage. With CA the fruit is picked when it is almost at the correct stage for eating, and during the long storage period it does not ripen any more.

As in many modern manufacturing enterprises, containers have entered the apple business. The fruit is stored in 20 bushel bins. An electric powered forklift makes light work of stacking them in the cool room and bringing them out for packing.

The apples are taken directly from the cool room and loaded into refrigerated trucks for shipment to the market. Most are sold in Sydney. Mr Renouf said that despite the added transport costs he received better prices

Apple grading bins in the sorting and packaging section of the large storage shed.

APPLE BUSINESS

By MALCOLM PULLMAN

in Sydney, particularly for high quality fruit.

Apart from acts of God, such as hailstorms, there was no excuse for poor production from a modern orchard.

"We have sprays and insecticides that will control all known pests, carefully calculated charts to tell us when to pick apples and machinery to take the back-breaking work out of things," he said.

The Renoufs use a very thorough pest control program which is based on Department of Agriculture recommendations. In addition the orchard is completely tile drained and sod culture is used.

Sod culture consists of allowing grass to grow around the trees but in keeping it carefully mown. If the grass is allowed to get rank it takes too much fertility from the soil which feeds the trees.

To maintain production through the dry summer period they have built a 12 million gallon dam. Permanently laid pipes feed this water to a number of hydrants strategically located throughout the orchard and from these the water is either sprayed or flooded to the trees.

For the future Mr Renouf does not expect an easy time.

"Things won't be too bad for us as we are prepared to change, also we are a family unit. This means we don't knock off at five o'clock every day and it also means we have enough experience to know what to do."

"Most exporters consider the impending entry of Britain into the Common Market will have a significant effect on our markets but we'll worry about that when it happens.

"Naturally we have to try to find sales elsewhere, and CA could help in this field. Because we can maintain the condition of the apples with CA we should be able to feed a constant supply to any new markets.

"Naturally the first apples to go out if we overproduce will be the poor quality ones. That's why it's important for us to grow only top quality fruit," Mr Renouf said.

An interesting point he made about the EEC concerned the expansion of apple growing in France. The French have adopted a high density planting system with up to 1000 trees an acre compared with the Renoaufs' 120. The French aim is to grow fewer apples per tree but more per acre.

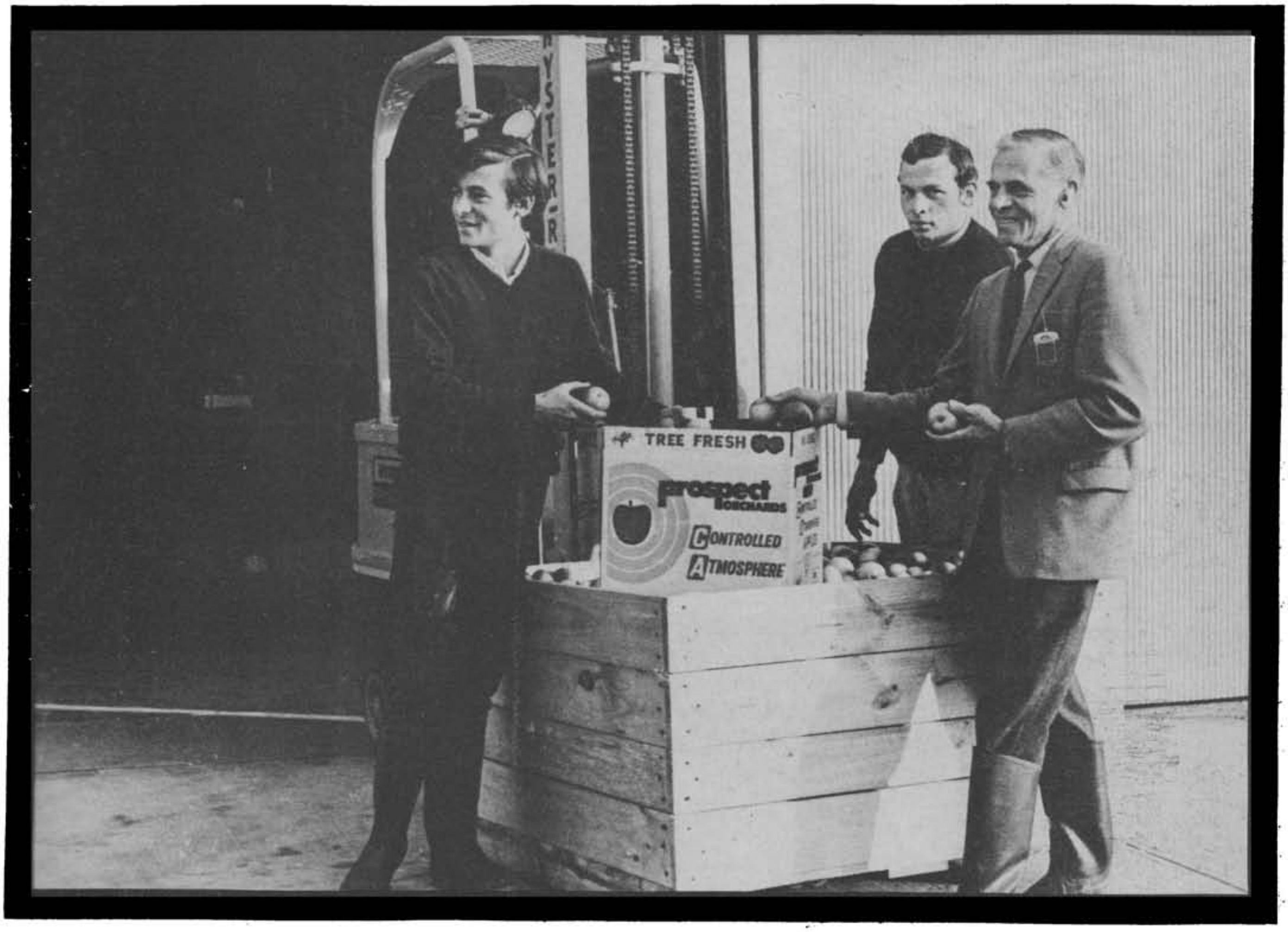
Meanwhile, the deputy Prime Minister and Minister for Trade and Industry, Mr John McEwen, said on his return recently after examining in Britain the likely consequences of EEC entry, that fresh fruit entered the UK at present duty free.

But if the UK joined on terms which meant the present common external tariff of the market applied to Britain these duties would be raised to such a level as would put Australian exports at a very serious disadvantage compared with exports to Britain from elsewhere in the market.

It is to be hoped the French are not spectacularly successful.

If they are, the apple business could become even more hazardous.

Alex Renouf and his two sons with some of this year's apples, which have been kept in controlled atmosphere storage.



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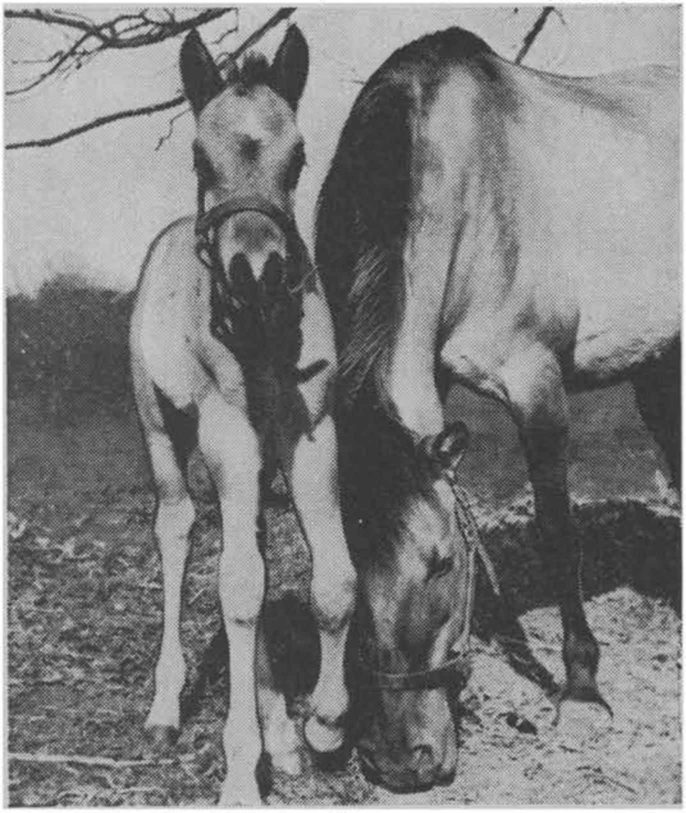


trade NEWS

If you require further information on items appearing on these pages, or any other item advertised in COUNTRY, please write to us and we will endeavor to see details reach you.

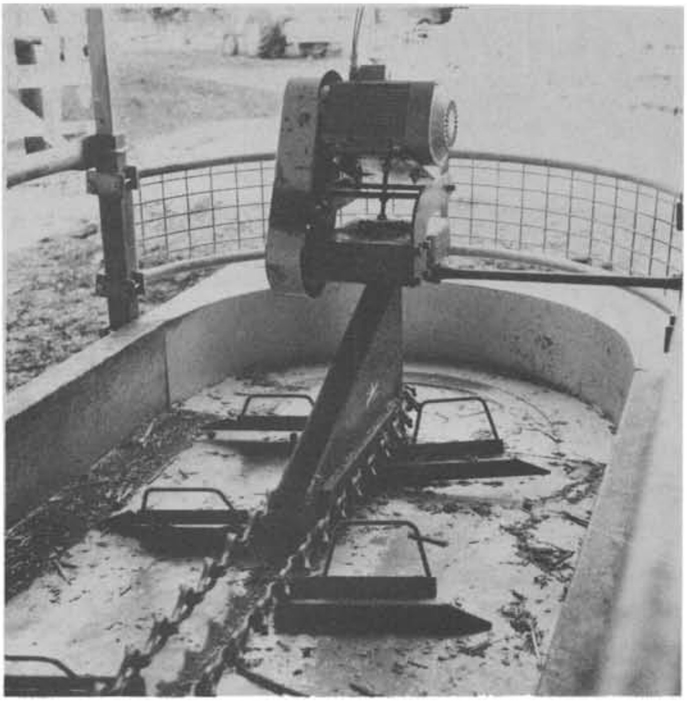
Two new models have been added to Repco's range of battery chargers. They are the model 571 which provides a charging capacity of 65 amps and incorporates a testing device; and model 511, a lightweight, portable scaled down unit of 10 amps charging capacity. This unit has a 10 amp output for six and 12 volts, incorporating high and low switching for both voltage ranges, and weighs only 12 lb. It consists of a double wound transformer with a number of secondary tappings, one of which is selected by the front panel mounted selector switch and fed to a bridge type rectifier. From the rectifier, DC output is fed through a moving iron meter, then to a thermally operated circuit breaker, and through the DC output leads. It is self protected against over-loading.

—Repco

OPPOSITE PAGE

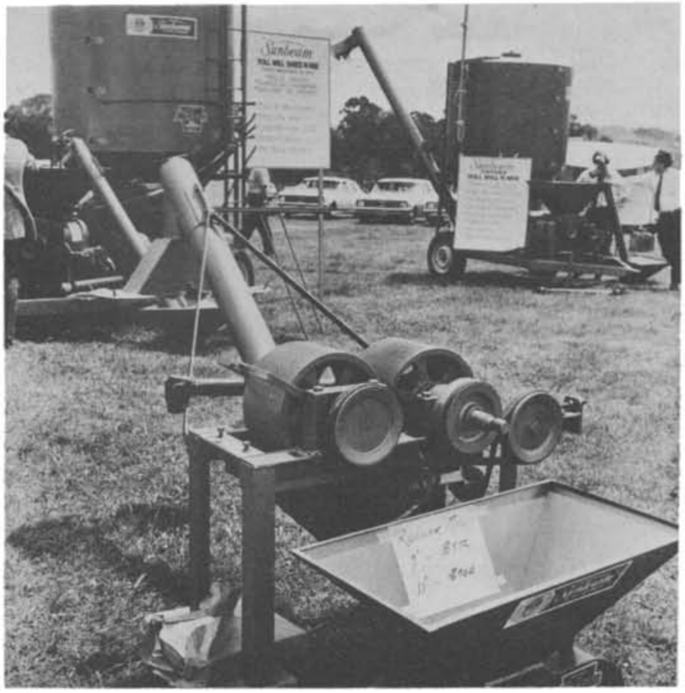
Stationary model features of this new roller mill for controlled milling of grain are: unloading auger, twin bagger, magnet protection, feed rate control adjustment and pto shaft drive. This mill comes in two models and handles all grains; wheat, barley, oats, corn, peas, beans etc. The models are the 7 in. wide with 10¾ diameter rollers and a minimum capacity of 100 bushels per hour, or the 11 in. wide model with 10¾ diameter rollers and a minimum hourly capacity of 200 bushels. The former weighs about 400 lb and is 63 in. by 40 in. by 45 in. high. The 11 in. model weighs about 480 lb with the same dimensions. Prices, $572 and $740 respectively.

—Sunbeam.



At the flick of a switch, one man can fill a trough to feed up to 200 cows with this feedlot conveyor belt. Claimed to save up to eight man hours per day, the trouch is available in lengths up to 100 ft and has access for stock on both sides. Feed is distributed along both sides by an endless chain and slat mechanism powered by a 3 hp electric motor driving through V belts and a reduction gearbox. The heavy gauge galvanised steel trough is 4 ft wide by 10 in. deep. The chain and slats move at a rate of 1 ft per 1½ seconds, and take five minutes to make a complete circuit of the trough. Design of the trough allows it to be eaten clean with no leftovers. The unit will handle practically any type of feed such as hay, silage, haylage and grains with virtually no separation of fine and coarse ingredients. The trough can be supplied with or without a 20 ft wide corrugated galvanised steel roof complete with guttering and down pipes to protect equipment and feed from rain and provide comfortable feeding conditions for stock.

—Grasslands



Portable Pumps to help feed the millions

Throughout Australia and South East Asia, Ornel's Portable Axial Flow Floodlifter Pumps are becoming a familiar sight. Designed for properties where fixed irrigation is not feasible and for flood drainage, the Portable Floodlifter can be easily towed to any location, where it can deliver up to 15,000 G.P.M. at heads up to 15 feet. Available in sizes 12″, 16″, 24″.

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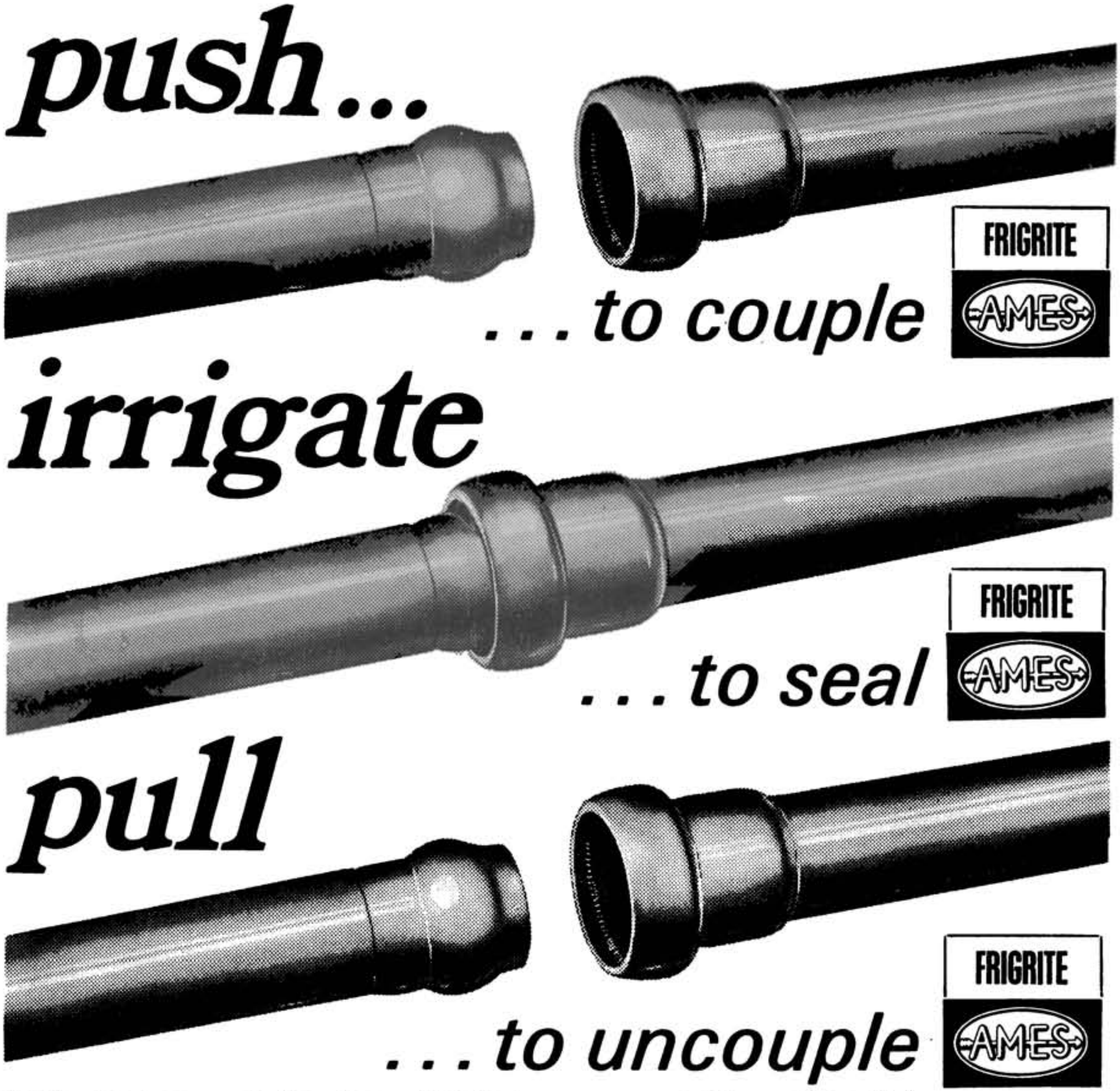

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Ask for a demonstration of the Ames ball coupler irrigation system — and remember Ames features the exclusive Ball Coupler and non-corrosive AL-CLAD aluminium tubing throughout the complete lateral mainline system.

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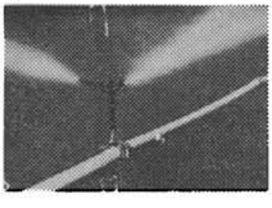

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TODAY'S RESEARCH TOMORROW'S PROFIT

A COUNTRY feature bringing you the latest in research from around the world.

EARLY CALVING HEIFERS

A report published by the US Feeds Grains Council tells of work carried out at the Danish National Institute of Animal Science, comparing two groups of Danish Red heifers reared on a special diet designed to give optimum growth rate, and inseminated to calve at 18 months of age.

The twins of one group are due to calve at 30 months of age, and the other group consists of non-related heifers the same age. The director of the experiment at the institute believes that a heifer's breeding ability depends on her weight rather than on her age, and that this is also the critical factor in her subsequent performance.

All three groups in this experiment came into heat for the first time when they had reached weights of between 570/595 lb.

More than 50 percent of the heifers inseminated at about nine months held to first service. The results from these trials are expected to be available soon.

Earlier work at the institute showed marked advantages in milk yields from calving at 24 months old as compared with 30 months.

RAM FERTILITY

At the University of New England, NSW, work on the fertility of rams exposed to high temperatures was carried out and is reported in "Animal Production".

Fertility of rams was studied following their exposure to heat for one or three days in a hot room. Eight to 16 days later exposed rams showed significantly lower fertility, judged by lambing rate of ewes compared with unheated control rams.

From 26/36 days after exposure treated rams were not significantly less fertile than control ones.

There were no significant differences in fertility between rams exposed one day or three days to heat.

NEW BRANDING TOOL

Sheep, cattle or pigs can be easily marked with a new roll-on marker. Length of hair does not seem to affect its efficiency.

It basically consists of a glass ball in a socket and the texture of the glass ball and the fitting within the socket are said to be the features of this instrument which gives rise to a constant flow of marking material and a minimum of clogging with loose hair, etc.

PESTICIDE FOR POTATOES

A report in "Fertiliser, Feed and Pesticide" journal tells of a new pesticide which it is claimed gives efficient control of eel worm and virus vectors in potatoes and is said to increase the yields of sugar beet by controlling docking disorders and viruses and is becoming available in the UK.

It is in the form of a granular material and is used at 10 lb per acre for docking disorders of sugar beet, 20 lb per acre for viruses in sugar beet, and potatoes, and 30 lb per acre for potato root eel worm.

RYE-COUCH GRASS HYBRID

A new hybrid between Rye and Couch grass providing grain which has baking qualities of wheat and contains about 20 percent gluten has been produced in the USSR.

According to a report in "Flour, Feed Milling" it is said to have the qualities of the best varieties of Rye, high yield and winter resistance and is also said to be resistant to various diseases. The researchers believe the new hybrid may become a rival of wheat.

Although it has been grown in laboratory conditions only so far, it is thought that it can be sown in the north in regions where wheat generally fails to ripen.

Once they said graziers couldn't organise.

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CONTINUOUS FLOW GRAIN DRYING

In Australia, the harvesting and storage of grain at a suitable moisture content has posed somewhat of a problem. This article looks at one of the latest and most effective methods of grain drying.

ALTHOUGH artificial drying of grain and oil seeds has been practised in other parts of the world for a long time, it is only of recent years that Australian farmers have attempted to artificially dry their crops.

The first method of drying was with the batch type dryer. This consists of a bin or silo of grain into which large volumes of hot air are forced until the moisture content of the grain is reduced to the desired level.

However, it was not long before the disadvantages of batch drying became apparent – uneven drying – moist spots and overheated areas were but a few of the troubles encountered.

As a result of these problems, and the higher standard of drying now being demanded by both local and overseas grain buyers, farmers are now following and adopting. the overseas method of continuous flow drying which eliminates many of the problems of batch drying and at the same time requires less labor and can be operated as a fully automatic unit. The equipment is very low in cost to operate over large volumes of grain.

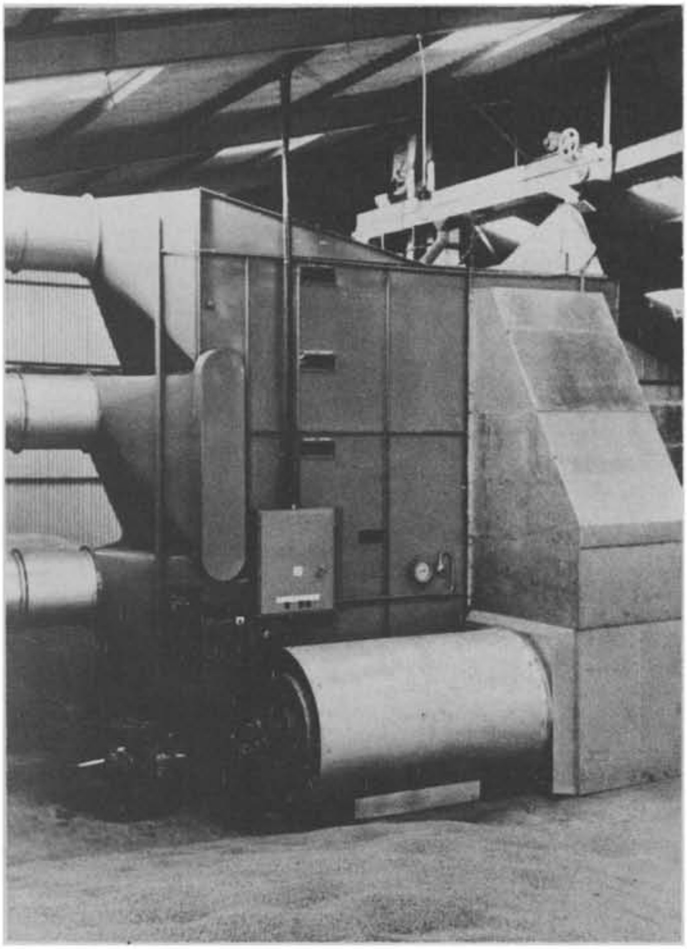
With this system, grain continually passes through the dryer, is heated, cooled, and automatically transported to storage.

Basically there are two types of continuous flow dryers in use in Australia today – the horizontal conveyor type where the grain being dried is conveyed in a continuous stream along perforated beds, through which hot air is circulated before the grain drops into another section where cooling takes place before being discharged from the dryer. The Allmet grain dryer is a typical example of a dryer operating on this principle.

The various models of the Allmet version range from an output of 2½ tons to 12½ tons per hour; prices ranging from about $5000 for the smaller version to $12,000.

This includes complete assembly of the dryer and training of the customer in the operation of the machine.

The other type, known as a tower or column dryer is where the grain is elevated to the top of the tower or column and then gravitates downward between perforated walls or over perforated baffles, while hot air is forced through the grain to remove moisture in the top drying section and cold air in the lower section to cool the grain before being



Ten tons per hour Allmet Continuous Flour Grain Dryer.

The best quality is achieved by harvesting at or slightly after the grain matures.

discharged. The American Hess and Shanzer high capacity dryers are of this type.

These range from 10 ton per hour throughput to 120 ton per hour with prices estimated at roughly $1000 per ton of capacity.

Both conveyor and tower type continuous flow grain dryers are normally fitted with automatic controls to ensure the drying temperature does not exceed that set on the dial and the grain is not discharged from the dryer until the required amount of moisture has been extracted from the grain.

Although relatively few continuous dryers have yet been installed in this country those that are operating have proved that continuous flow dryers are the answer where the large tonnages of grain have to be dried at a low cost without someone being continually in attendance.

Many economic advantages do accrue from mechanical drying, and, generally all disadvantages are offset by the large capacity for processing grain.

Under Australian conditions the greatest advantages accrue if the output from the crop can be reduced by an average 8 percent or more moisture.

The processing needs to be complete within five days of harvest.

GRAIN DRYING SYSTEMS

Type of drying system	Volume/year to be reduced by about 8% Bushels
Mechanical drying not warranted except on high value crops	0- 5,000
In storage drying	5,000-20,000
Batch drying with single installation	15,000-40,000
Batch drying in combination with in storage drying	30,000-50,000
Batch drying with two installations	40,000-60,000
Continuous flow drying	50,000 and over

If you can get your crop off early, mechanical drying permits long term storage without deterioration allowing the grower to take advantage of seasonal price changes.

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FOR THE COUNTRY WOMAN

DONKEYS ARE NICE PEOPLE

Donkeys, regarded as pests in many outback areas of Australia, can make lovable pets. Where they have found their way into private hands they have been excellent ambassadors for their kind. One such retreat for the breed is a small farm in Tasmania.

by ANNE L. STUBBS

On goes the halter for the first time and Mandy's not quite sure what it's all about.

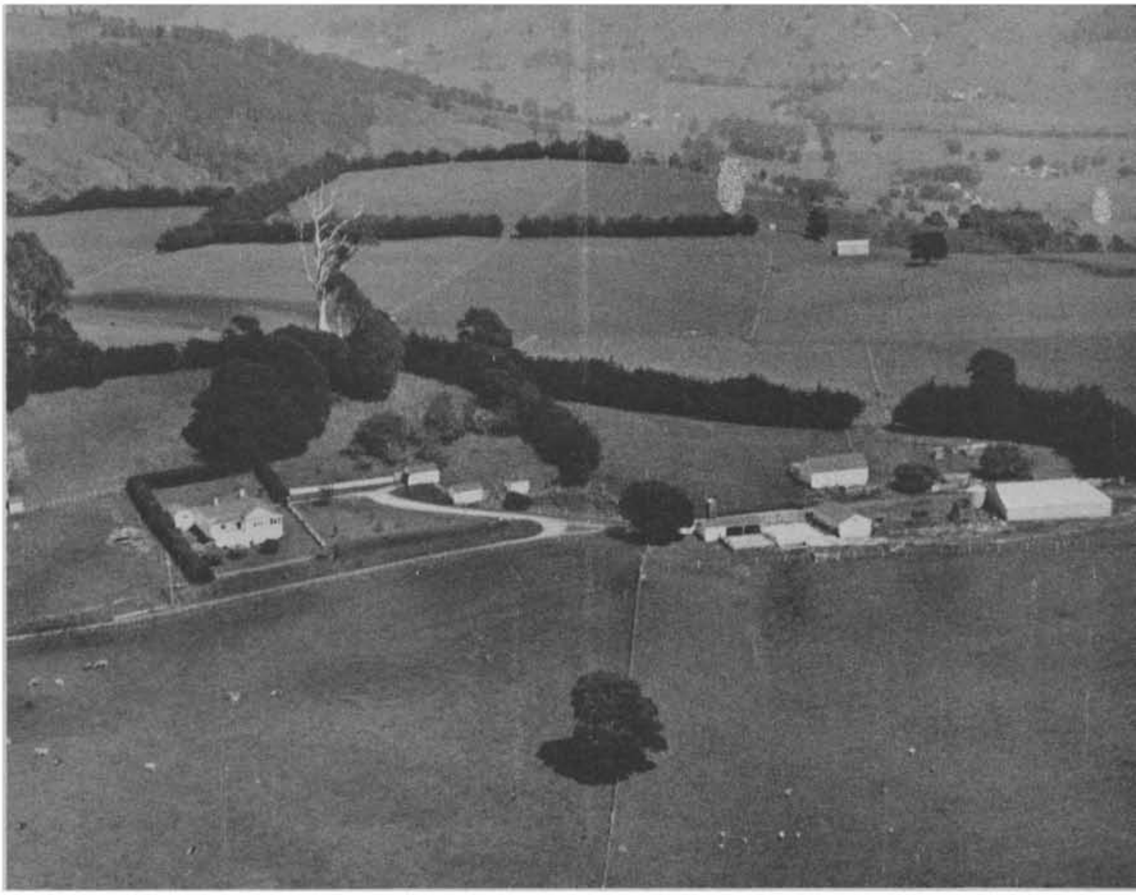
THERE ARE many heartaches and wrenches when one comes to disband and break up a home and farm on one side of the world to start again on the other.

Not the least of them for me was the parting with Henry, the tubby little grey Irish donkey who had taught my children to ride and was the beloved pet of all the family.

"I'll buy you another donkey!" I rashly promised my small daughter who, as 2½, simply couldn't visualise the distance that now separated her from her beloved Henry.

It was a promise I was to find far from easy to keep. We had only been in Tasmania a couple of months before we had found, and bought, the farm that was to be our new home.

"Now," I said, "I'll buy a couple of ponies and a donkey." I bought a couple of ponies all right, but a donkey



Jane and Jason — different temperaments, but loving kindness with children.

An aerial view of Keysoe, the Tasmanian property which is host to the six donkeys.

— that, in Tasmania, I discovered was another matter altogether!

I made extensive enquiries and advertised throughout the State. Finally, I had located a mere handful of donkeys. All in zoos or private wild life sanctuaries and none for sale. I turned to the mainland following up various leads. All came to nothing. I tried one or two stock agents. But donkeys, it seemed, were not stock! Then, by sheer luck, I came across the advertisement of a Sydney firm specialising in importing and exporting domestic animals. They found me donkeys, running wild in the Northern Territory, and personally delivered six to our Tasmanian farm.

These six donkeys, which just about doubled the donkey population of Tasmania at one blow, arrived in August, 1969, in a fanfare of publicity from Press, radio and TV and a downpour of rain, following one of the roughest nights that winter on the Bass Strait!

As they tottered out on to Tasmanian soil they looked very subdued indeed and far from wild. But wild they were, and taming them was to be a fair sized task.

There were four jennies and two jacks; three chocolate browns and three greys. One of the greys was actually a fawny grey and the dorsal stripe and "cross" over her shoulders was dark brown. not black. Most people, I think, know the legend of the cross on the donkey's back, how — ever since a donkey carried Our Lord into Jerusalem on Palm Sunday he has borne the mark of the cross over his own shoulders.

All were young, from 10 months to about four years, and sound. One of the jacks — a grey — was mature, the other, a chocolate brown, was the 10 month old baby. This one, Jason, is now rising two and has grown into an almost perfect specimen of a donkey. He also has an endearing and lovable temperament. Cheeky, inquisitive, mischievous and affectionate, and — of course, intelligent. For believe me, the donkey is no silly ass!

My ambition when I brought these donkeys into Tasmania was to breed them as pets and mounts for small children. Already, I have a waiting list for foals, proving that there is a demand to be met. However, as none of the jennies were in foal on arrival and the gestation period for a donkey mare is 12½ months, getting going as a stud is going to be a pretty long drawn out affair!

However, there was plenty to do with my stud of wild donkeys without having foals. All are now tame, four are broken to the saddle and two so reliable that they have attended garden parties and fairs to give children rides for charity.

As expected all proved to have totally different temperaments and personalities as we got to know them. Pete — the big jack, calm, good-natured and — stubborn! Jason — the colt, friendly and mischievous. Sally, pretty fawn Sally, gentle and shy, wanting to be loved but afraid to push foreward. Mandy — always in the background is shyest of them all, and only Ruth, who at 4½ loves donkeys more than ever, may walk up to her in the paddock, stroke her face and even put her arms round her neck. Katey, pretty frivolous Katey with grace and speed and a sense of humor and last of all Jane, who has taken Henry's place as the family pet.

Different and original my six donkeys all are, but one thing they have in common — a complete absence of vice and they love people.

A donkey who has known nothing but kindness will return only kindness and such a donkey will need no formal breaking. A donkey who has confidence in his owner will show surprise, nothing more, when the saddle is put on his back for the first time and later — when a child is put in the saddle.

Most seem to have a built-in regard for small children and will stand quietly in the paddock while inexpert little hands fumble with halters. Likewise they will put up with endless brushing and combing. They will allow themselves to be pushed up against handy gates or logs to be mounted and will potter about at a leisurely pace. They may insist on going where they want; they may even refuse to go at all but usually in such a pleasant way that their rider, though exasperated, is not frightened!

Donkeys have amazing memories and never seem to forget anything, bad or good, once learned. Obviously it is important to see that they learn the right things in the early stages and their memories of associations with humans are only good. A point vastly in their favor with busy parents is that donkeys do not need exercising. A donkey who has been carefully broken and trained may be turned out for several months. When caught again he will be just as good as the day he was turned out.

And catching them is seldom a problem. They are only too eager to come and pass the time of day with their human friends.

In the UK and America the donkey is a much sought after pet for children — and adults. Almost a status symbol. He is bred with care and shown with pride at the leading shows.

Australia has no small indigenous ponies like the British Isles to supply the needs of small riders, but she has, thanks to those who turned their redundant donkeys loose some 60 years or so ago, a vast population of wild donkeys who could help to supply this need — for a carefully trained donkey can be all that any rider of eight years or under can need. —END

COUNTRY DOCTOR

The sudden onset of deafness is a not uncommon happening with some people in certain occupations. Your hearing is good today — tomorrow you feel you should be wearing an earphone.

YOU THINK YOU'RE GOING DEAF?

IT'S NO joke. Specially if you're one of them.

How, they figure, could a chap go deaf overnight?

It's all very simple. Fortunately, the cure is pretty simple too. Great majority have a straight-forward, mechanical blockage of the ear canal.

The canal is about two inches long. It runs from the outside, right down to the drum.

It's lined with a special sort of skin. This produces wax. Technically it's known as cerumen. But the name's not important.

It's there to trap bits of grit, foreign objects, and anything else that might penetrate down and injure the sensitive drum. The drums must stay intact, otherwise hearing becomes impaired for good.

Some men produce too much wax. Outdoor jobs often produce lots of sweat. This runs into the ears. Dust and grit and grime also collect. It all mixes up with the wax, which gets very soft in hot weather.

Very soon a great mass of hard material like concrete collects. After a shower one night, Clunk! The inside of the canal completely covers over. Five seconds later, deafness sets in. Noise finds it hard to penetrate the wax barrier.

Special drops called Cerumol are then placed into the canal. Say three drops three times a day. After that, a good shower will often remove the lot. If not, get the doctor to syringe it all away. Never fails.

BLACK MOLES

My 18 year old daughter has a black beauty mark on her back. It's frequently exposed to the sun. It's getting bigger. Is this dangerous?

—Mrs L. G., Central Qld.

Is it ever. Get along to your favorite doc this very day. Tomorrow may be too late! I'm not being dramatic. Merely sensible. Black moles can turn into the most lethal form of cancer known. When they start and grow, this is a cardinal danger sign. It's worse in 15-20 year olds. Queensland has the world's highest incidence of these things. They're called Melanomas. For goodness sake DON'T FIDDLE WITH IT. And it is not a beauty spot. Stop the kidding.

BED WETTING

My two kids drive me crazy with bed wetting. One's five and the other seven. It's been going on ever since they were born. We're a long way from town, and frequent doctor's visits are simply impossible. Any suggestions?

—"Worried Mum", Wollomombi.

Relax. The jet-set era of the swinging seventies is well and truly here. We can't cure cancer. But we can send men to the moon. And we can fix bed wetters. Cheaply too!

A recently developed family of drugs called the "Tri-cyclic Anti-depressants" is a whizz for curing this diabolical disorder. Basically it's meant to fix the down-hearted. But an unexpected bonus extra is curing of difficult bed-wetters.

Get a supply from the doc. (50c – what a bargain!)

DUST IN THE EYES

What's the best way to get a bit of grinding dust out of my eye. It's happening commonly.

—F. T., Glen Innes.

Grinders are a never-ending hazard. Fragments can come from the wheel itself, or from the piece of metal being ground. Severe eye injuries occur when the particle hits with force. It can become deeply embedded in the cornea (the eye's transparent window) or the white conjunctiva.

It's essential to get proper medical help at once for these. Simple ones that aren't embedded can often be "irrigated" out. An eye bath is filled with tepid saline (salty water).

Looking towards the ceiling, hold this tightly over the eye, and blink many times. A match with a wisp of cotton wool wrapped round the end is a good gadget to gently remove more stubborn superficial fellows.

Anyone seeking advice to be answered in these columns should address their inquiries to COUNTRY DOCTOR, C/- Australian COUNTRY Magazine, 142 Clarence St, Sydney, 2000.

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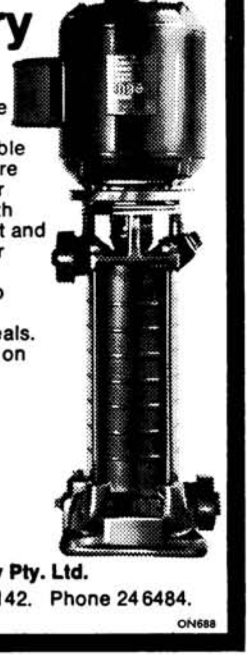

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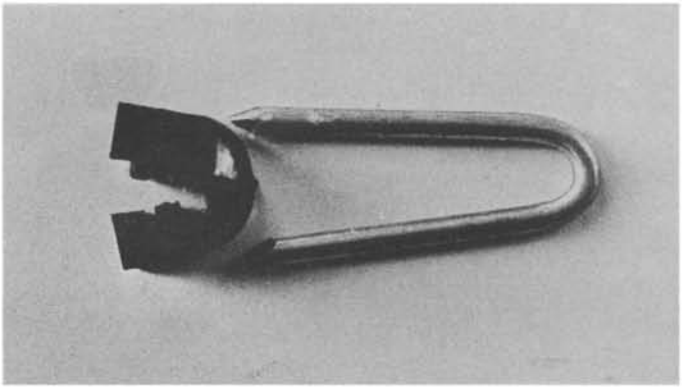
HE SUCCEEDS DESPITE THE PESSIMISTS

There is no real substitute for capital. But Gory Dwyer is proving that the combination of hard work and practical ideas can still make dairying a profitable venture.

By MALCOLM PULLMAN



These small plastic insulators clip around the wire and the special staple is hammered over them.

MUCH has been written and even more said about the plight of the dairy farmer; about subsidies, economics, profit margins, markets and a rural way of life.

Gory Dwyer is aware of all these, and a few more too. But despite the sceptics he is willing to give the dairy industry a go.

Gory started dairying as a share farmer and five years ago went into debt to buy his 139 acre "Glen Park" property near Menniyan, South Victoria. He drew up a five-year development plan and on the strength of it borrowed a further $11,000 from the Commonwealth Bank at 6 percent.

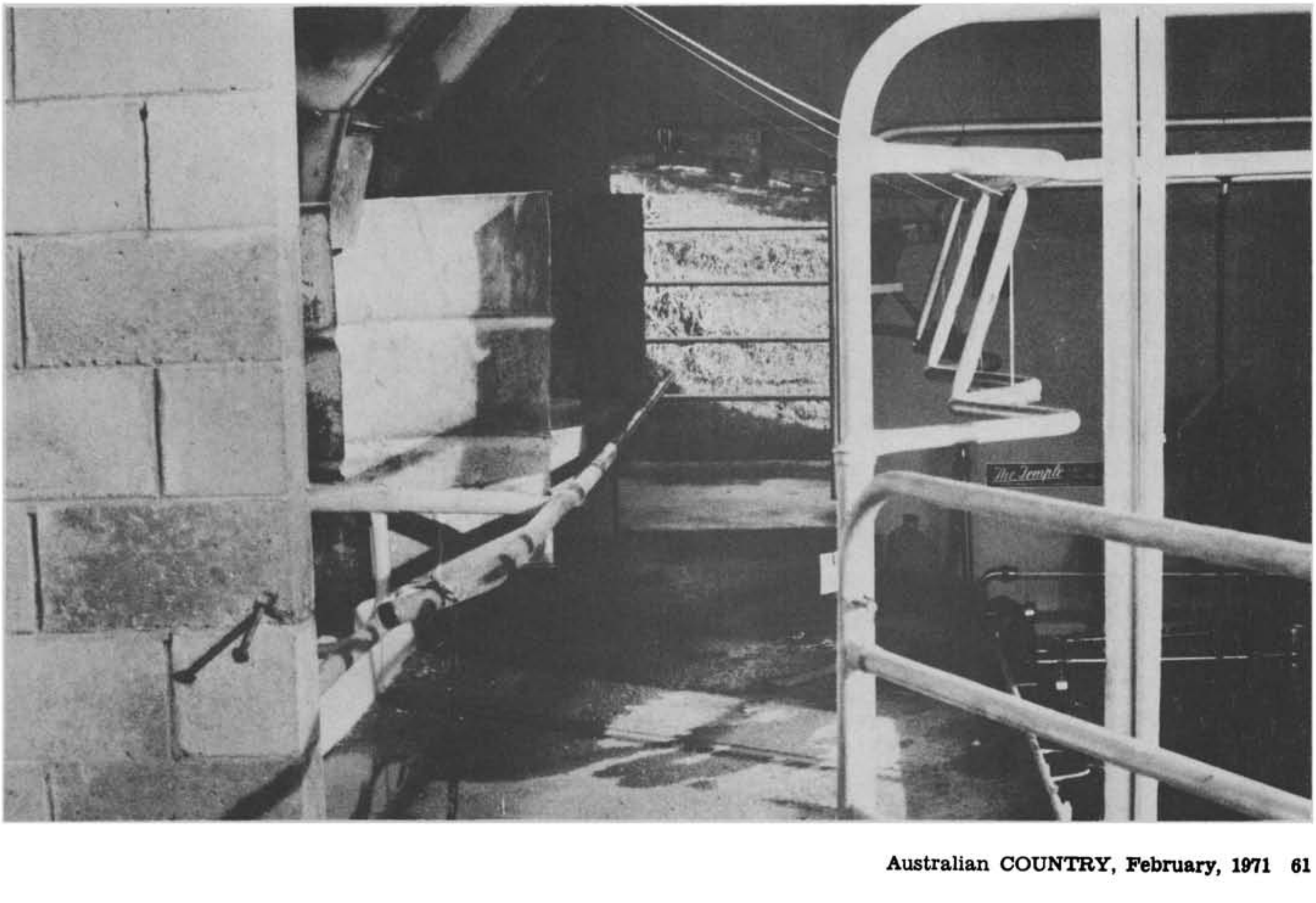
Things haven't gone exactly to plan, but Gory is winning the battle against repayments.

Running an efficient property with a minimum of capital calls for a combination of hard work and ingenuity. That's why Gory chose permanent electric fencing to subdivide the hilly to undulating farm into small paddocks.

The electric fencing has been extremely successful. There were some problems at first, stock refused to go through gateways fearing they would get a shock. Also the spacing between wires in some places allowed young calves to break out.

But most important was the cost factor. Conventional fencing costs $4-5 a chain compared with $1.35 for the two wire electric system used on Glen Park. The expense of running the fence can be written off for all practical purposes – $4.80 per year for electricity.

Gory uses a Waikato, mains fed, electric generator to



The modern lowline herringbone shed with bale feeders made from cut down 44 gallon drums.

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Gory Dwyer (centre) with some of the journalists during the Shell sponsored RASV tour recently.

activate his fences – these units are capable of electrifying about 20 miles of wire in good conditions.

The actual fences have two wires, the top is live and the other acts as an earth. Light posts are spaced about one chain apart. Special insulators are used. These clip over the wire and are stapled direct to the posts.

Around the cowshed and house the live wires are carried above ground, but they are buried under gateways. Once again, Gory has managed to cut costs in burying these wires. He simply used double insulated cable similar to that in household wiring.

To save himself nasty jolts when working near fences the live wires are fitted with switches.

When Gory took over five years ago the dairy herd was only 68 strong. Since then it has been built up to 80, using only replacements bred on the property. It was intended to have 96 milkers this year, but with voluntary quotas on dairy production some of the cows have been used to rear dairy beef.

One of the biggest drains on the $11,000 development loan was in converting the old style cowshed into a low-line herringbone unit. Even in this, Gory's practical mind can be seen at work – instead of using expensively manufactured bale feeders, cut-down 44 gallon drums do the job.

Now the herd is built up to a reasonable number and the pastures developed to take a reasonably high stocking rate. Glen Park will become a stud farm.

An Australian Illawarra Shorthorn bull has been bought from the Southerly line and will be used as the basis of the stud.

In the original five year development plan an 11.5 percent on the loan money was aimed for. This was achieved in the early stages but last year dropped substantially to 7.5 percent. However, Gory is not particularly perturbed about this.

HELP
LEGACY
all the year round

Is this your PROBLEM?

By BOB ALLEN

COLD ENGINE STARTING

During winter, with heavy frosts, I have difficulty starting my tractor. To overcome this I have followed the procedure of draining off the radiator and block every night and filling up with boiling water in the morning to start up. Am I doing any real harm to the tractor?

—Phil Prans, NSW.

Well, I wouldn't recommend it, because of the risk of cracking the cylinder head or block by the sudden change in temperature. If there is any risk of freezing then the engine should have anti freeze in the cooler system. This would eliminate the need for draining.

But really, you shouldn't have any difficulty in starting a diesel engine by normal means, providing the battery, starter and the fuel system and other components are in good order.

Alternatively, quick start sprays can be used quite safely. However, if they cause any loud knocking, this is a sign that their use is being overdone.

To use one of these devices properly requires two men. The intake manifold should be opened — do not spray through a dry paper type air cleaner — and the bomb should be sprayed very sparingly into the intake manifold while the engine is being turned over by the starter. This is why the procedure needs two.

In some tractors it is possible to open the connection between the air cleaner and the intake manifold and this is where the spray bomb should be operated. If the engine starts with a loud knock this is fair warning that you have used an excessive amount of the spray.

Your problem however, would seem to indicate there is a weakness somewhere and it could be worthwhile getting a tune up.

Very likely the injectors and the pump could do with a check, or perhaps the battery may be due for replacement or may not be fully charged.

A SLIMY TROUGH PROBLEM

I have a problem keeping my water troughs free of slime. Could you give me some advice in this regard?

—G. Newall, Qld.

This is a bit of a problem but there are two ways in which the troughs can be kept reasonably clean.

Both require that the troughs first be emptied and scrubbed out. Bluestone may then be added at the rate of 1 oz to 20,000 gals of water. This is a very small dose and is practicable only where water is held in large storages. Caution must be exercised as an overdose of copper can be dangerous.

Secondly, a chlorine compound can be used. Either chloride of lime or one of the high test chlorine bleaches. The rate here is 1 oz to 750 gallons. To keep the troughs clear, treat them reasonably often.

A MESH WINDBREAK

Could you tell me if ½ in. mesh netting would make an effective windbreak. If so, would a 6 ft high fence be suitable to shelter a newly formed orchard until the hedge around it grows sufficiently?

—R. J. Starr, Vic.

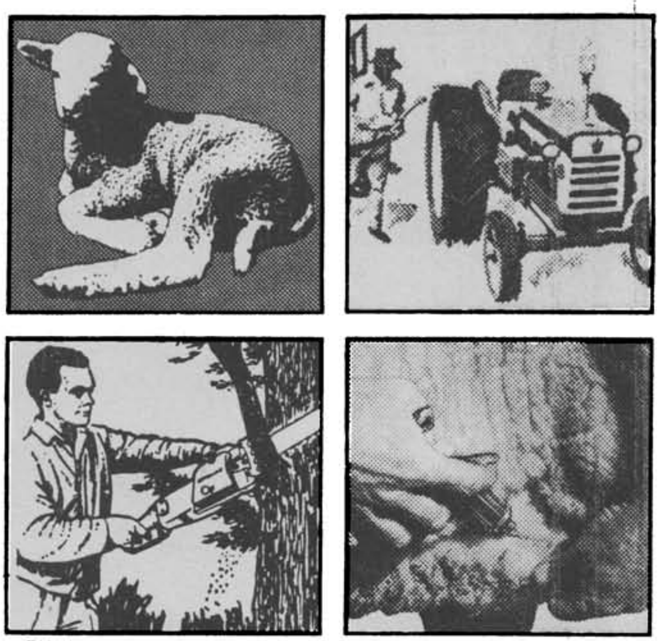
Yes, this type of netting will give some protection from wind damage. The small mesh of the wire obstructs the wind and reduces its velocity, yet at the same time allows it to pass without causing damaging turbulence.

Ideally, however, the permeability of a shelter fence should be about 50 percent.

This could naturally become expensive if the netting is to be used over a wide area, and it may pay to consider nylon netting as an alternative.

Nylon has the advantage of being lighter and cheaper. A 6 ft high fence should be

(Continued on page 65)



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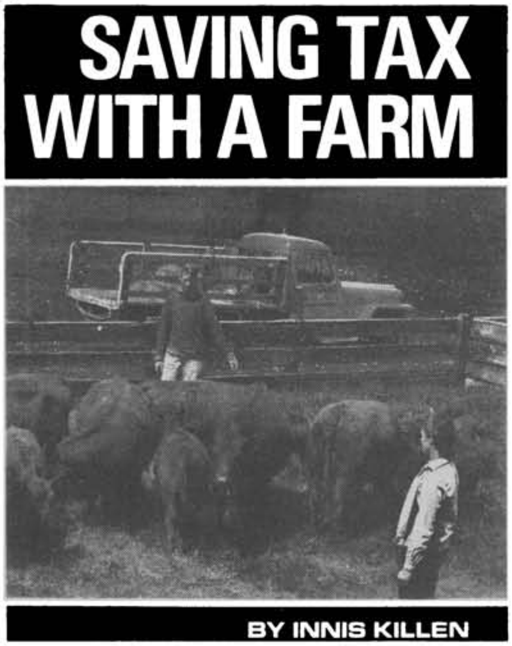
With these words, farm-economist author Innes Killen begins his book — and then proceeds in the most straight-forward manner to describe how this can be done. He also discusses farming as a long or short-term investment, where to obtain finance, things that are necessary to make farming a profitable business venture.

ABOUT THE AUTHOR

A qualified valuer and an expert on farm-management accounting, Innes Killen is also well known for his contributions to Australian COUNTRY Magazine and other rural and business publications. His book, SAVING TAX WITH A FARM, will be an invaluable aid to the businessman in helping him overcome those first hurdles in the acquisition of a farm and the management problems involved.



SAVING TAX WITH A FARM by Innes Killen
Available at all bookstores—$1.80

IS THIS YOUR PROBLEM?

(Continued from page 63)

adequate. It will not only give protection to the orchard but also assist in the more rapid growth of the permanent shelter.

PRESERVING PINE THE COLD SOAK WAY

I have milled some pinus radiata for sheep yard timber and for building sheds. Which is the best and most economical way of preserving it. None of the timber will be in direct contact with the ground. Also, what is the best method of stacking the timber and how long would it have to be dried before and after treatment?

—J. S. Kelly, NSW.

Possibly the simplest method of treatment in your case would be the cold soak process. The preservative used here is either creosote or pentachlorophenol in oil.

To allow penetration of the preservative into the cell structure of the timber, the bulk of water present in green timber must first be eliminated. This is achieved by stacking the boards on a solid level foundation 18 in. above the ground.

The boards are laid flat with 1 in. to 2 in. gaps between them. The gaps should be vertically aligned to provide continuous vertical flues.

Each layer of boards is separated by fillets 1 in. thick and 1 in. to 2 in. wide. Rows of fillets must be vertically aligned and supported by the foundations to prevent sagging. Fillet spacing should be 2 ft to 3 ft for 1 in. timber and 3 ft to 6 ft for 2 in. and thicker.

Stacks should be square at both ends (box ended) to avoid overhanging ends which are liable to warp excessively. The stacks should be covered to prevent degrade in the top boards and to prevent rain wetting. A suitable cover is one of reject boards or galvanised iron.

The stacks are subsequently left to dry until the moisture content of the timber has reached 25 percent.

With well covered stacks, drying down to this moisture content should be achieved in six months.

Undiluted creosote or pentachlorophel — PCP — mixed in five percent weight for weight solution in diesel or furnace oil are used for preservative.

To get the PCP into solutions with heavier grades of oil it is necessary to heat the mixture. While it may appear unnecessary to use heavy grades of oil as a solvent it is an advantage to do so as heavy oils appear to have preservative properties themselves and do not allow blooming of the PCP on the surface.

Regardless of which of the two preservatives are used, all that is necessary after filling the treatment bath is to immerse the seasoned, sawn timber in the preservative for four hours, ensuring that it is fully covered by the preservative during this period. It may be necessary to top up the bath at intervals. After the four hour soaking period, remove the timber from the bath and allow it to drain to remove excess preservative.

Care should be taken in handling these two preservatives as both, but PCP in particular, can cause severe skin irritation. Solutions of PCP and the undissolved flakes should be handled only with rubber gloves.—END

JERSEY CALF FEEDING

What is the correct quantity of buttermilk powder for feeding Jersey calves? At present, I use 1 oz to one pint of water, in three pint feeds. I am not sure this is enough.

—J. Jackson, South Coast, NSW.

Butter milk powder and skim milk powder have similar composition, but to be the equivalent of wholemilk, must be reconstituted at the rate of 2 lb per gallon of water. Mixed at 1 lb per gallon they are equivalent of skim milk only. Your mixture of 1 oz per pint is only half of this skim milk mixture and should therefore be increased at least to twice or 2 oz per pint.

For Jersey calves seven pints of wholemilk equivalent daily is recommended whether given in one or two feeds.

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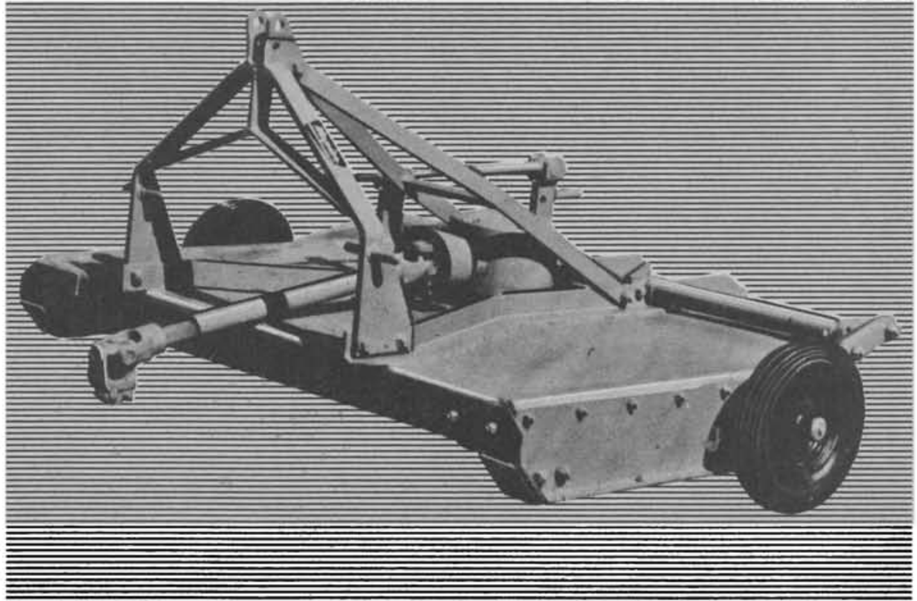

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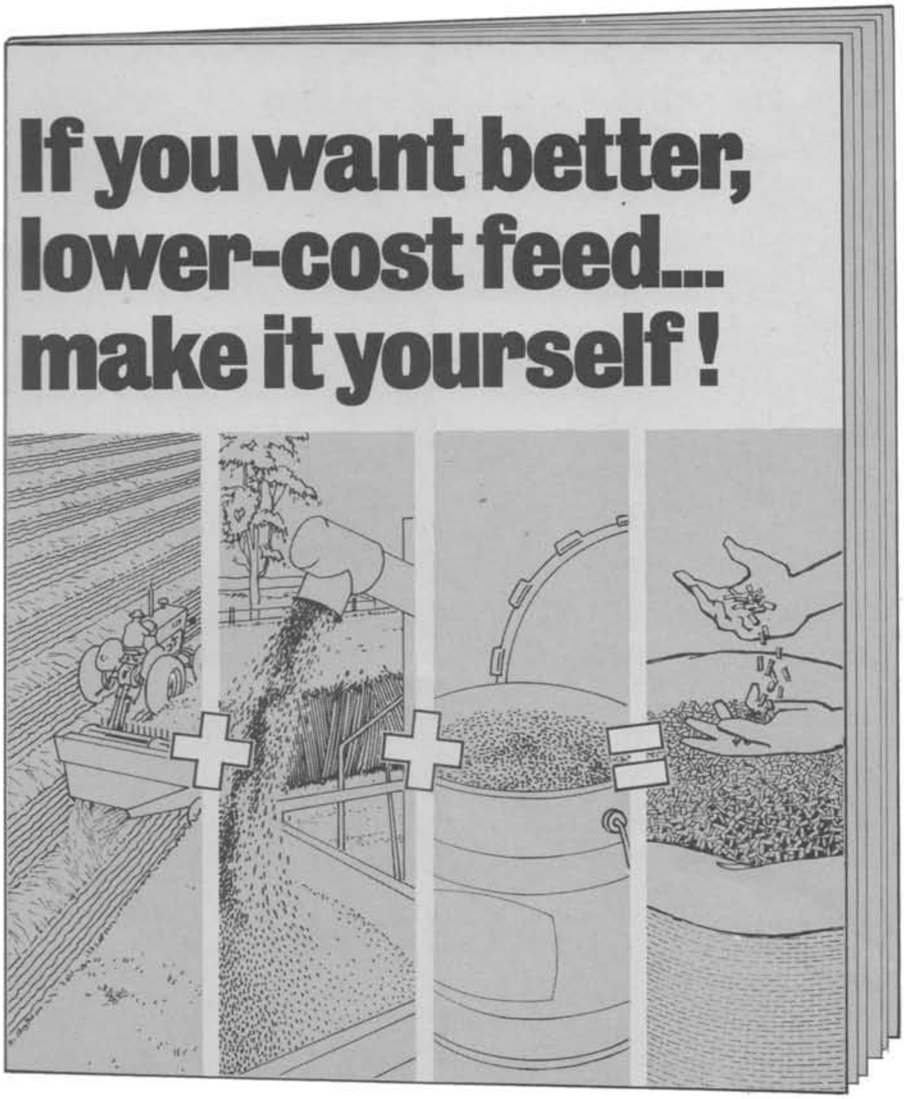
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